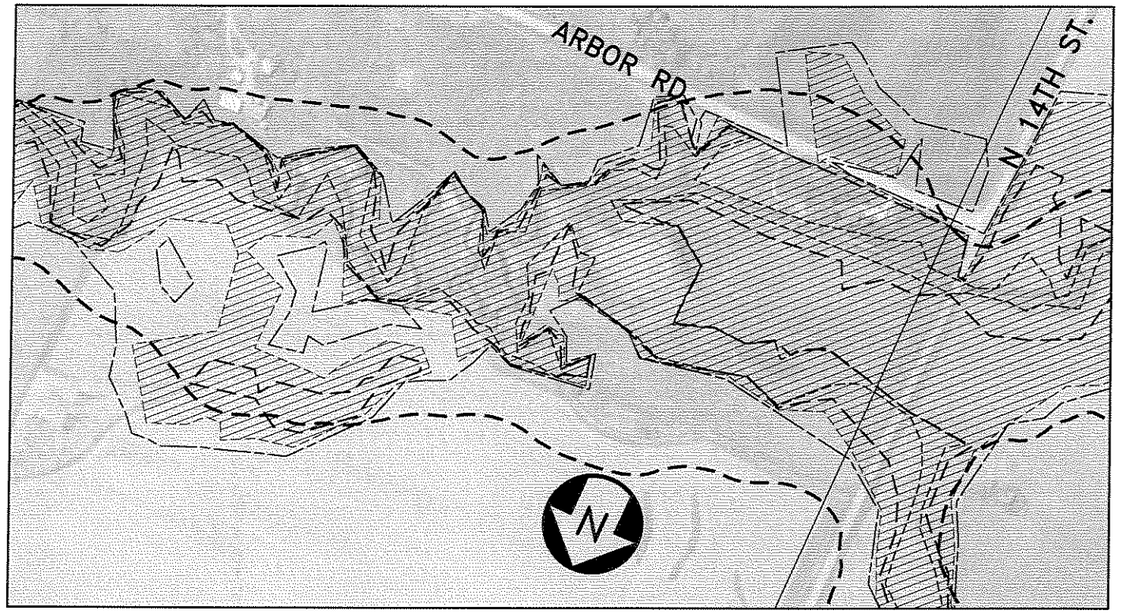
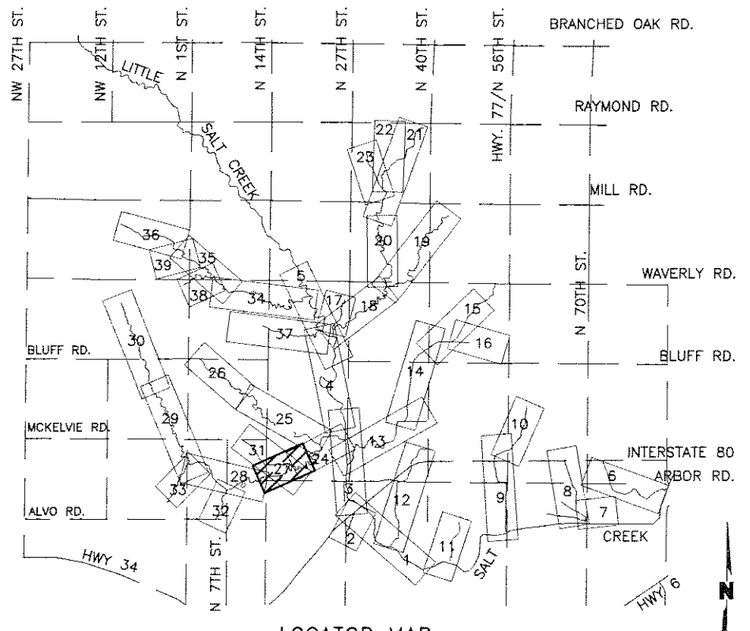


100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4

------ 2-YEAR
— — — 10-YEAR
▨ 100-YEAR
▬ ▬ 100-YEAR LITTLE SALT CREEK FIS
—— 500-YEAR



LOCATOR MAP

OLSSON ASSOCIATES
1111 Lincoln Mall
Lincoln, NE 68508
1-402-474-6311

Lincoln, Nebraska

Plan View of Stream Segment 27

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AF

Photo 43: Looking downstream from North 27th Street..

Stream Segment 27 in UPZ N-4

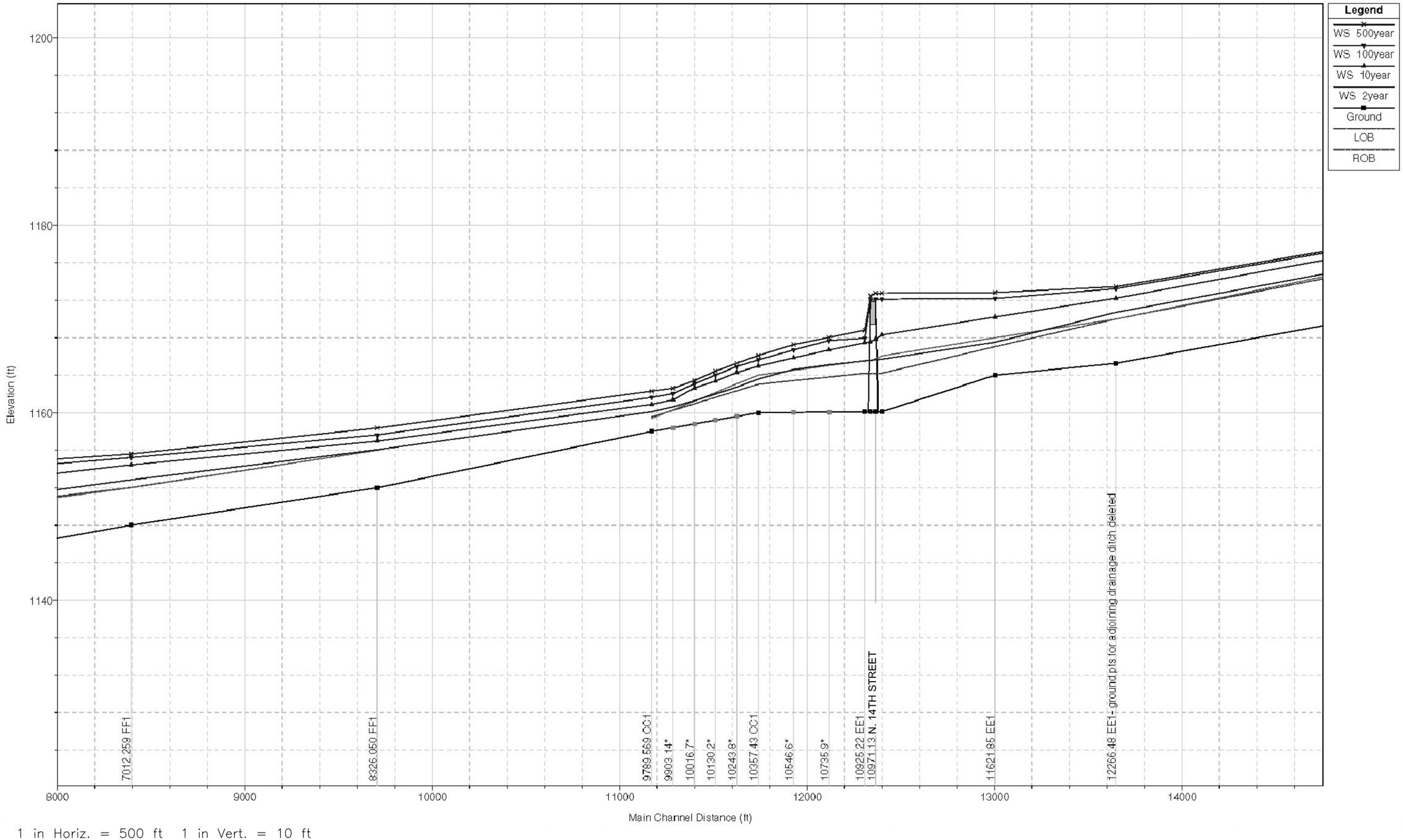
Evaluation

Stream Segment 27 begins ¼-mile east of North 14th Street and extends parallel with Arbor Road through North 14th Street to ¼-mile west of North 7th Street.

- Reach Stability — This reach shows a few signs of active stream bed and bank erosion. The channel has been straightened east of North 14th Street along Arbor Road. The channel has approximately a 2-year capacity. Velocities through the North 14th Street bridge and for ⅛ -mile downstream are erosive for floods with an average return frequency of 10-years or longer.
- Flood Hazard — Commodities, crops, pasture and wetlands along the channel are subject to flood hazard. A house and out-buildings appear to be in the limits of the 100-year floodplain along Arbor Road. Building low opening elevations would need to be confirmed to accurately determine flood hazard exposure to these properties.
- Infrastructure — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossing at North 14th Street meets minimum DCM requirements (see the hydraulics section for more information on overtopping frequency). Additional flow comes from a tributary located north of the bridge. Flows escape from the tributary for flow rates greater than the rate for the 2-year storm and follow the road ditch south to the N-4 mainstem, increasing the flow through the bridge.
- Water Quality — Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- Land Use and Ownership — The land around this stream segment is privately held. The land use is agricultural land is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- Multi-Purpose Use Potential — A direct connection with Little Salt Creek enhances the N-4 mainstem's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability			✘
Flood Hazard Potential			✘
Infrastructure		✘	
Water Quality		✘	



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

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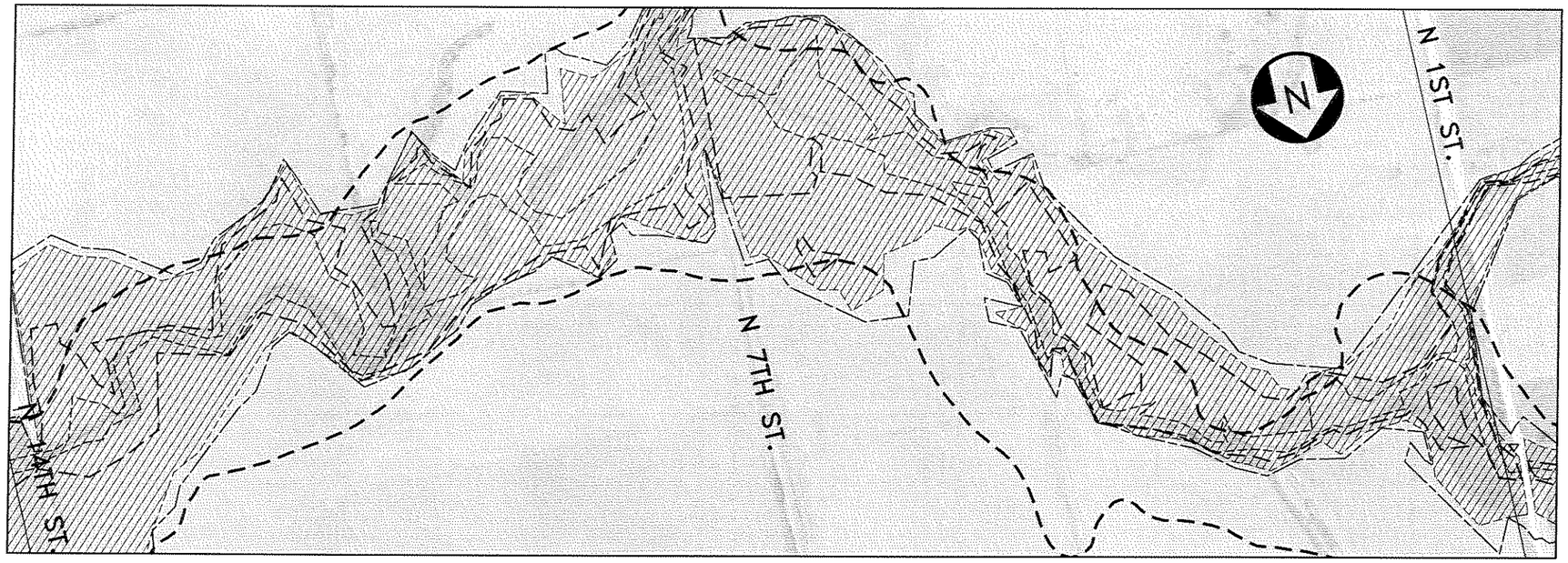
1111 Lincoln Mall
Lincoln, NE 68508
1-402-474-6311

Lincoln, Nebraska

Stream Segment 27

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

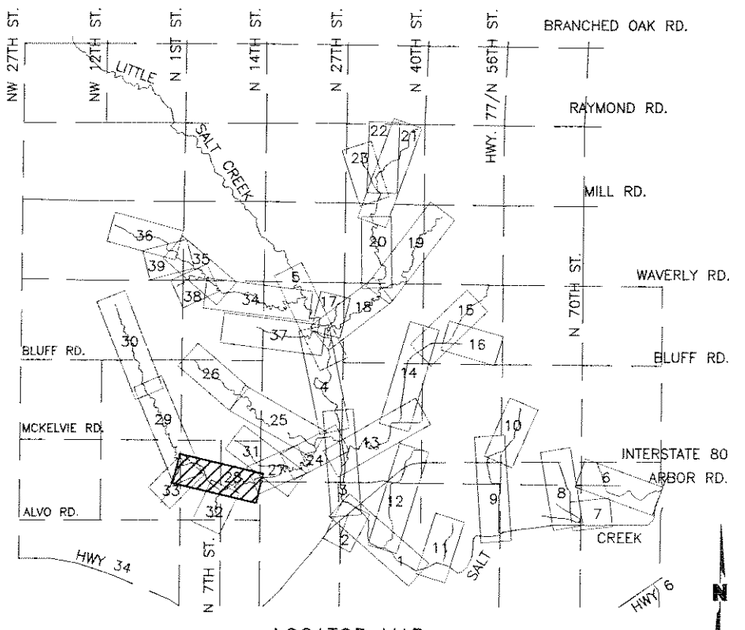
FIGURE: I-13AF



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4

------ 2-YEAR
— — — 10-YEAR
100-YEAR
100-YEAR LITTLE SALT CREEK FIS
——— 500-YEAR



LOCATOR MAP

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1111 Lincoln Mall
Lincoln, NE 68508
1-402-474-6311

Lincoln, Nebraska

Plan View of Stream Segment 28

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AG

Photo 44: Looking upstream from North 14th Street.

Photo 45: Looking upstream from North 7th Street.

Stream Segment 28 in UPZ N-4

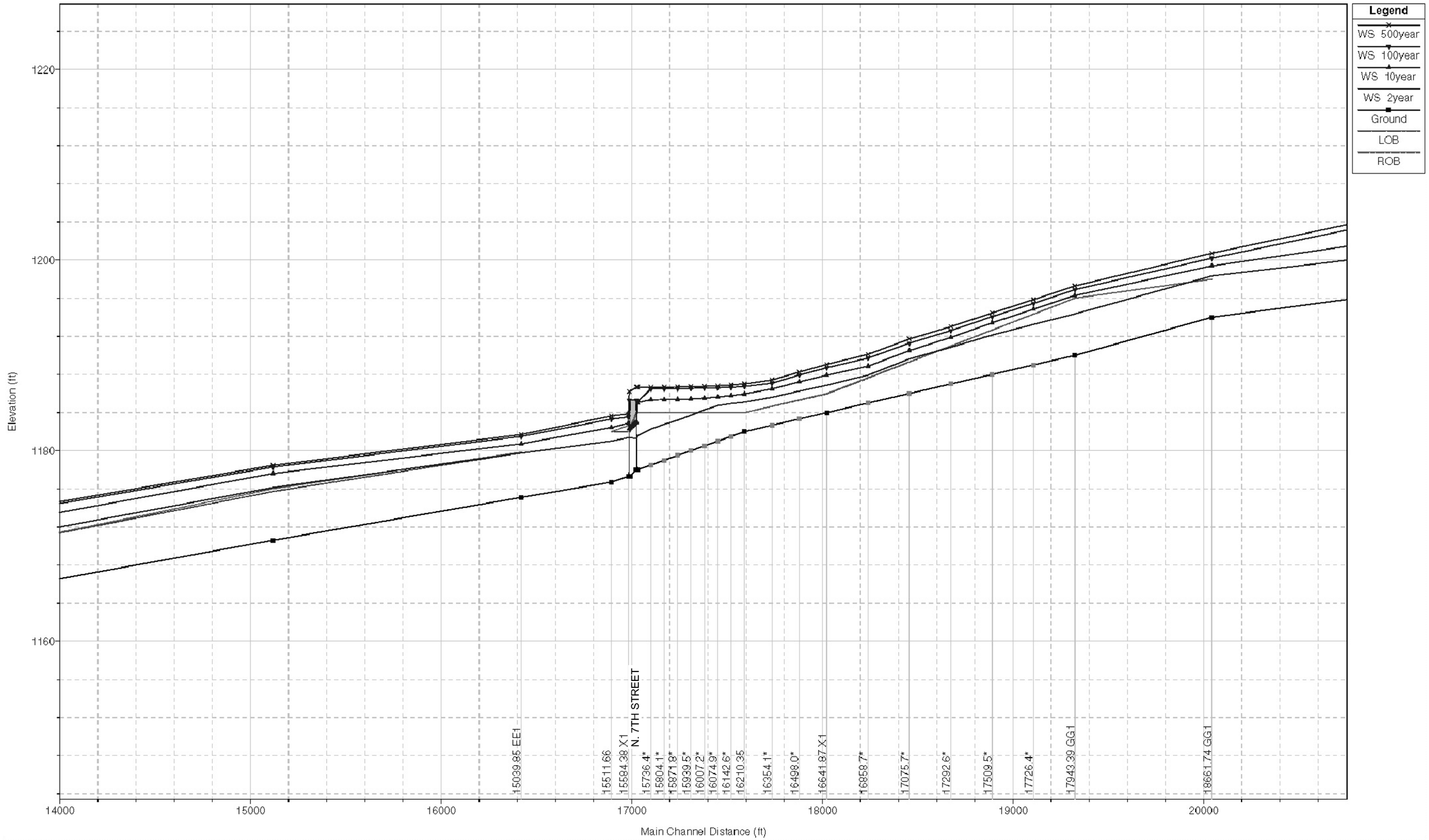
Evaluation

Stream Segment 28 begins a ¼-mile downstream of North 7th Street and extends to ⅜-mile upstream of North 7th Street.

- Reach Stability — This reach shows signs of active stream bed and bank erosion. The predominant factor is head cutting that is proceeding upstream from the straightened reach of channel. The culvert at North 7th Street provides hard point in the channel. The channel has approximately a 2-year capacity and non-erosive velocities.
- Flood Hazard — Commodity crops and pasture along the channel are subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain.
- Infrastructure — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossing at North 7th Street does not meet DCM minimum requirements (see the hydraulics section for more information on overtopping frequency).
- Water Quality — Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- Land Use and Ownership — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- Multi-Purpose Use Potential — A direct connection with Little Salt Creek enhances the N-4 mainstem's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

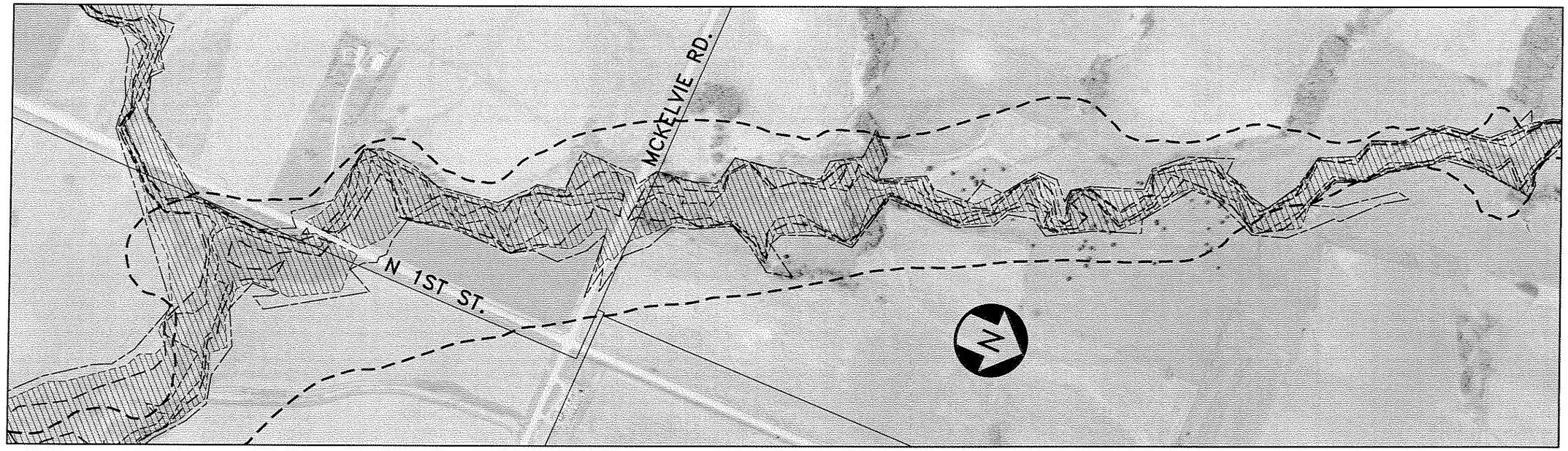
Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability			✘
Flood Hazard Potential	✘		
Infrastructure		✘	
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

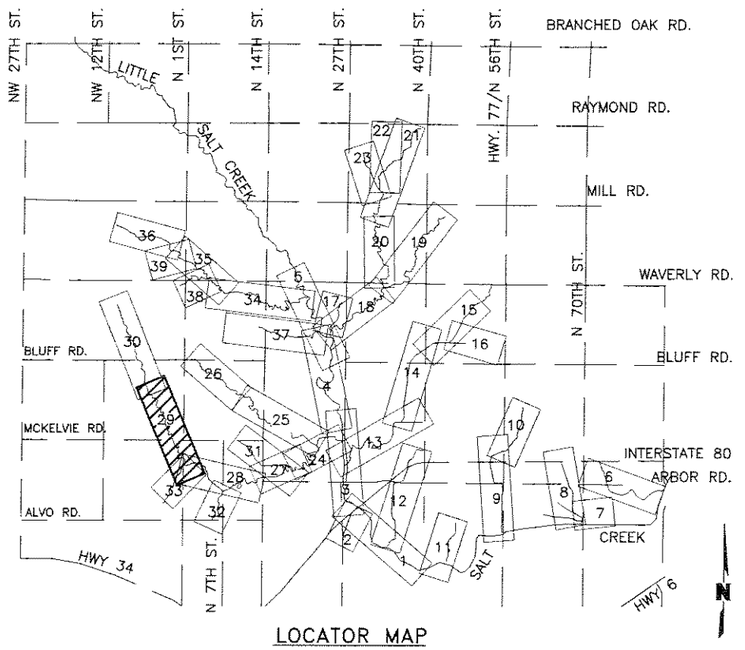
OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Stream Segment 28 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed	FIGURE: I-13AG



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4

------ 2-YEAR
– – – 10-YEAR
▨ 100-YEAR
▬ ▬ 100-YEAR LITTLE SALT CREEK FIS
—— 500-YEAR



LOCATOR MAP

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1111 Lincoln Mall
Lincoln, NE 68508
1-402-474-6311

Lincoln, Nebraska

Plan View of Stream Segment 29

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AH

Photo 46: Looking upstream from North 1st Street.

Photo 47: Looking upstream from McKelvie Road.

Stream Segment 29 in UPZ N-4

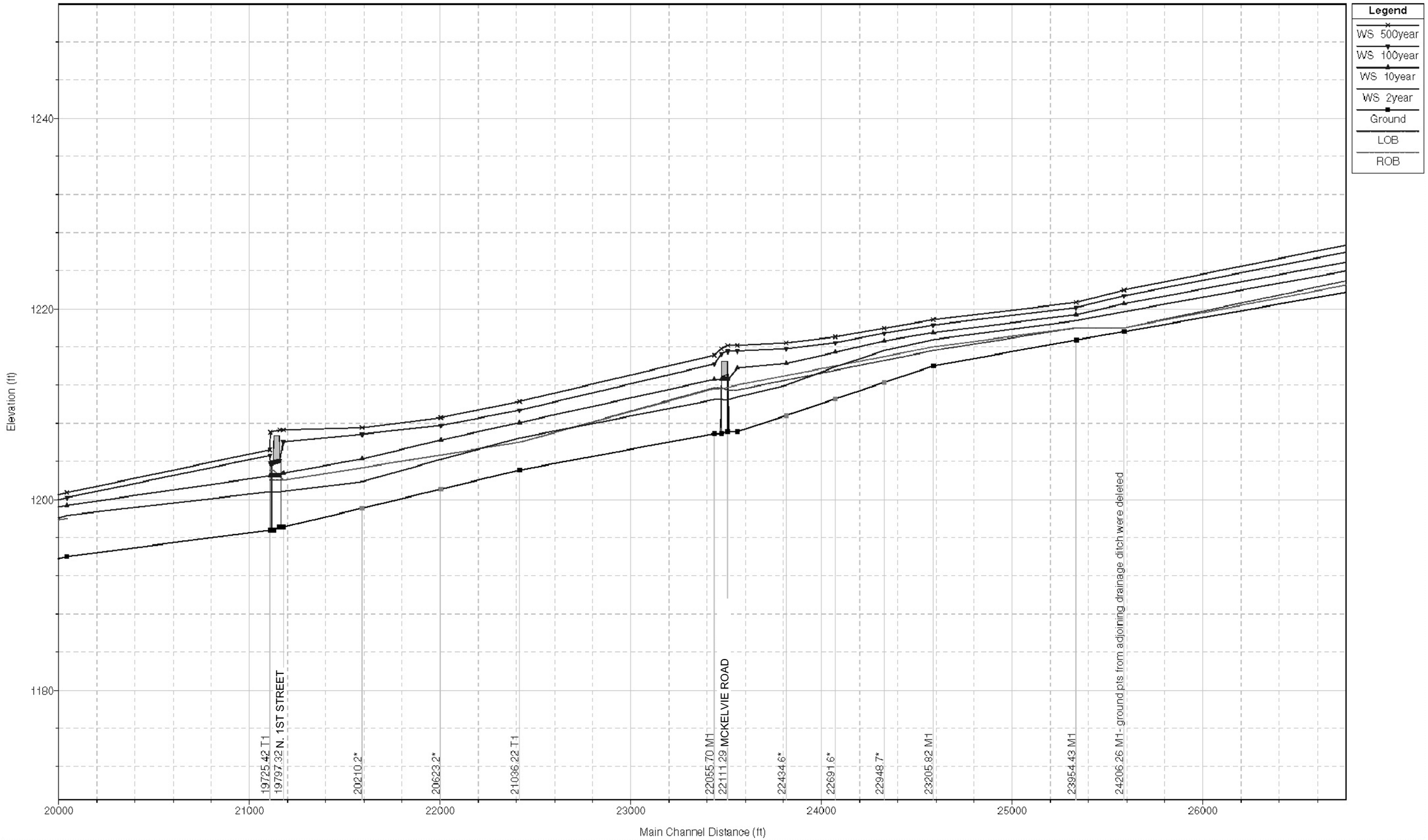
Evaluation

Stream Segment 29 begins ⅛-mile downstream of North 1st Street and extends ½-mile north of McKelvie Road. North 1st Street and McKelvie Road cross the channel.

- **Reach Stability** — This reach shows few signs of active stream bed and bank erosion. The culverts at North 7th Street and at McKelvie Road serve as hard points in the channel. The channel has approximately a 2-year capacity and non-erosive velocities. Erosive velocities would occur between North 1st Street and McKelvie Road during the 100- and 500-year floods.
- **Flood Hazard** — Commodity crops, pasture and wetlands along the channel are subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain, although an acreage maybe temporarily isolated by flooded roads.
- **Infrastructure** — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossing at North 1st Street meets DCM minimum requirements for overtopping but the crossing at McKelvie Road does not (see the hydraulics section for more information on overtopping frequency).
- **Water Quality** — Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- **Land Use and Ownership** — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- **Multi-Purpose Use Potential** — A direct connection with Little Salt Creek enhances the N-4 mainstem's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

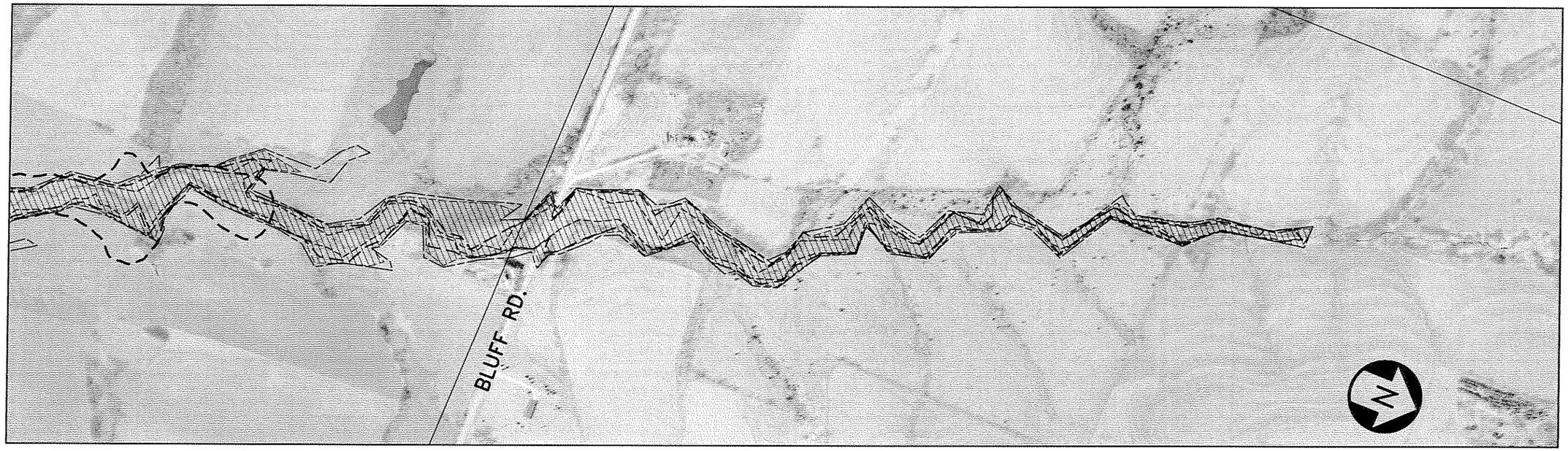
Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability		✘	
Flood Hazard Potential	✘		
Infrastructure		✘	
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

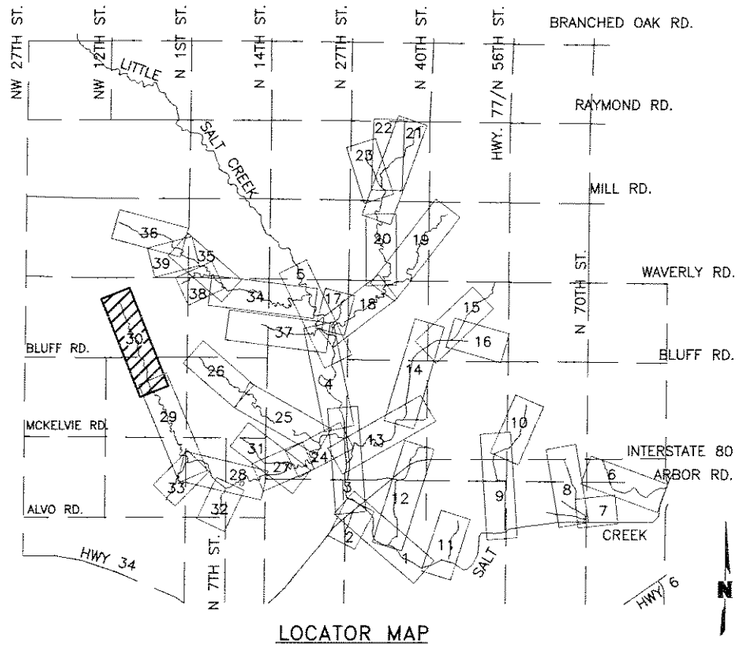
OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Stream Segment 29 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed	FIGURE: I-13AH



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4

------ 2-YEAR
— — — 10-YEAR
100-YEAR
▬ ▬ ▬ 100-YEAR LITTLE SALT CREEK FIS
———— 500-YEAR



LOCATOR MAP

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Lincoln, Nebraska

Plan View of Stream Segment 30

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AI

Photo 48: Looking downstream from Waverly Road.

Photo 49: Looking upstream from Waverly Road.

Stream Segment 30 in UPZ N-4

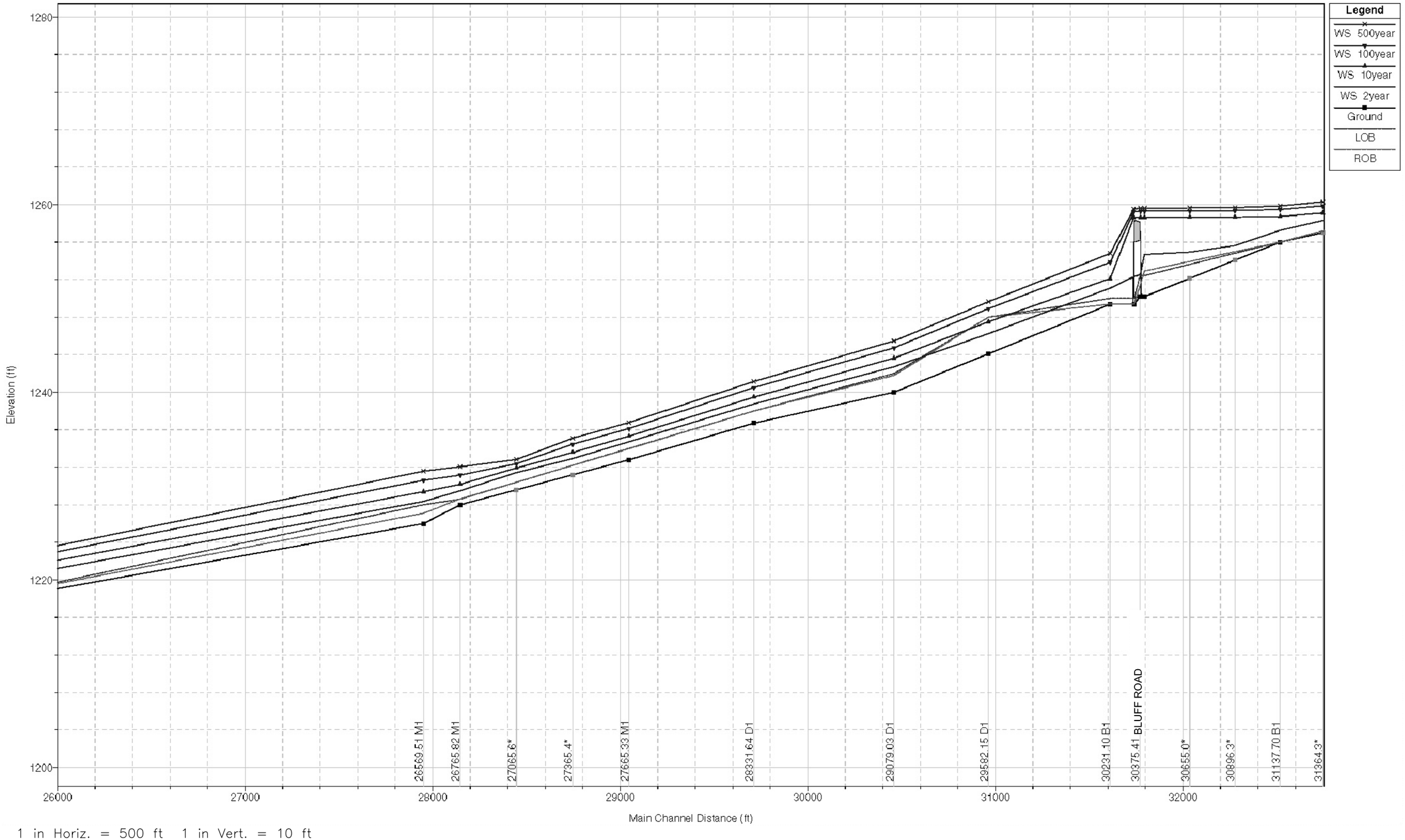
Evaluation

Stream Segment 30 begins ½-mile south of Bluff Road and extends ½-mile north of Bluff Road. Bluff Road crosses the channel.

- Reach Stability — This reach shows no signs of active stream bed and bank erosion. The culvert at Bluff Road serves as a hard point in the channel. The channel has approximately a 1-year capacity and non-erosive velocities.
- Flood Hazard — Commodity crops, pasture and wetlands along the channel are subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain.
- Infrastructure — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossing at Bluff Road does not meet DCM minimum overtopping requirements (see the hydraulics section for more information on overtopping frequency).
- Water Quality — Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- Land Use and Ownership — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- Multi-Purpose Use Potential — A direct connection with Little Salt Creek enhances the N-4 mainstem's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability	✘		
Flood Hazard Potential			✘
Infrastructure		✘	
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

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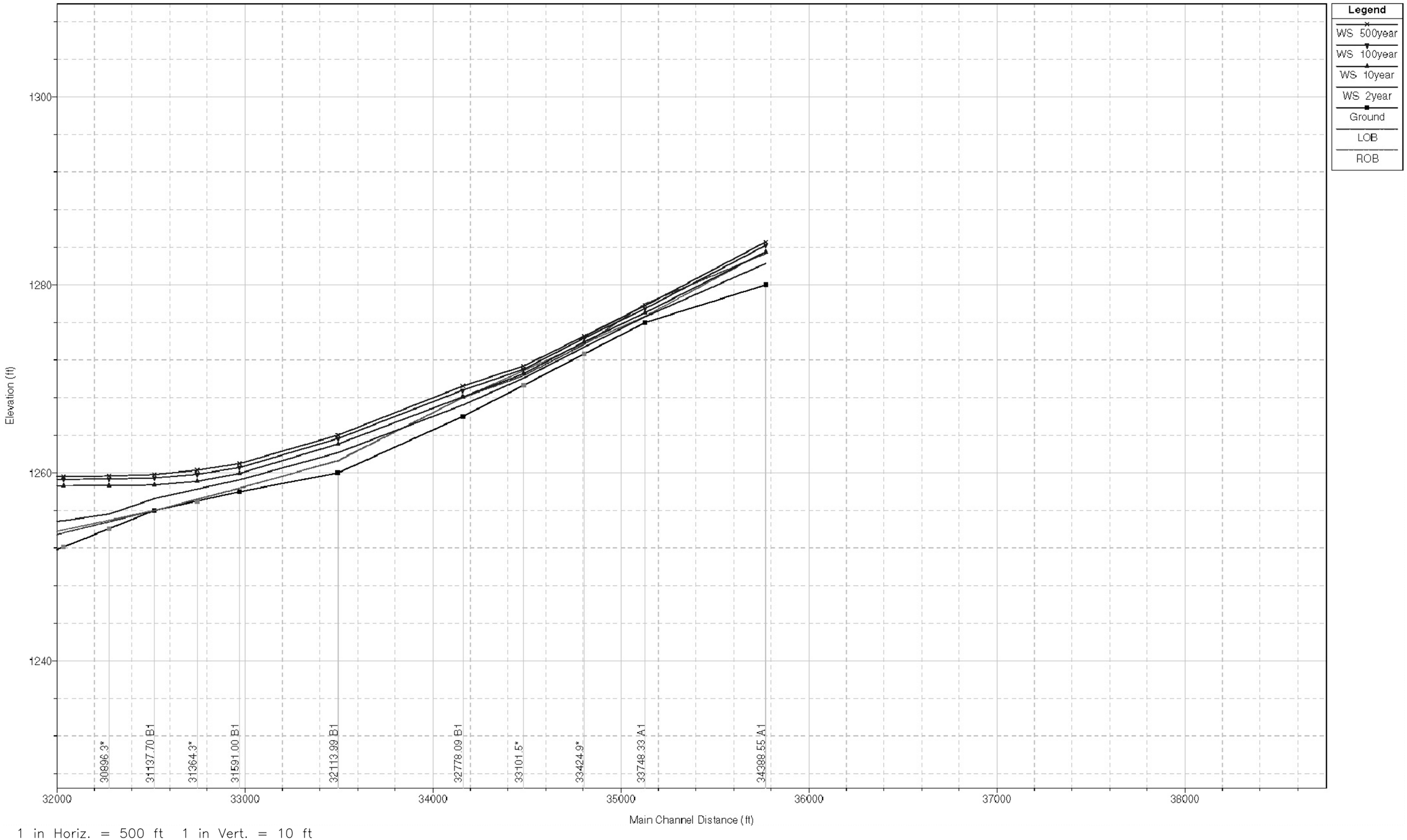
Stream Segment 30

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-13AI



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

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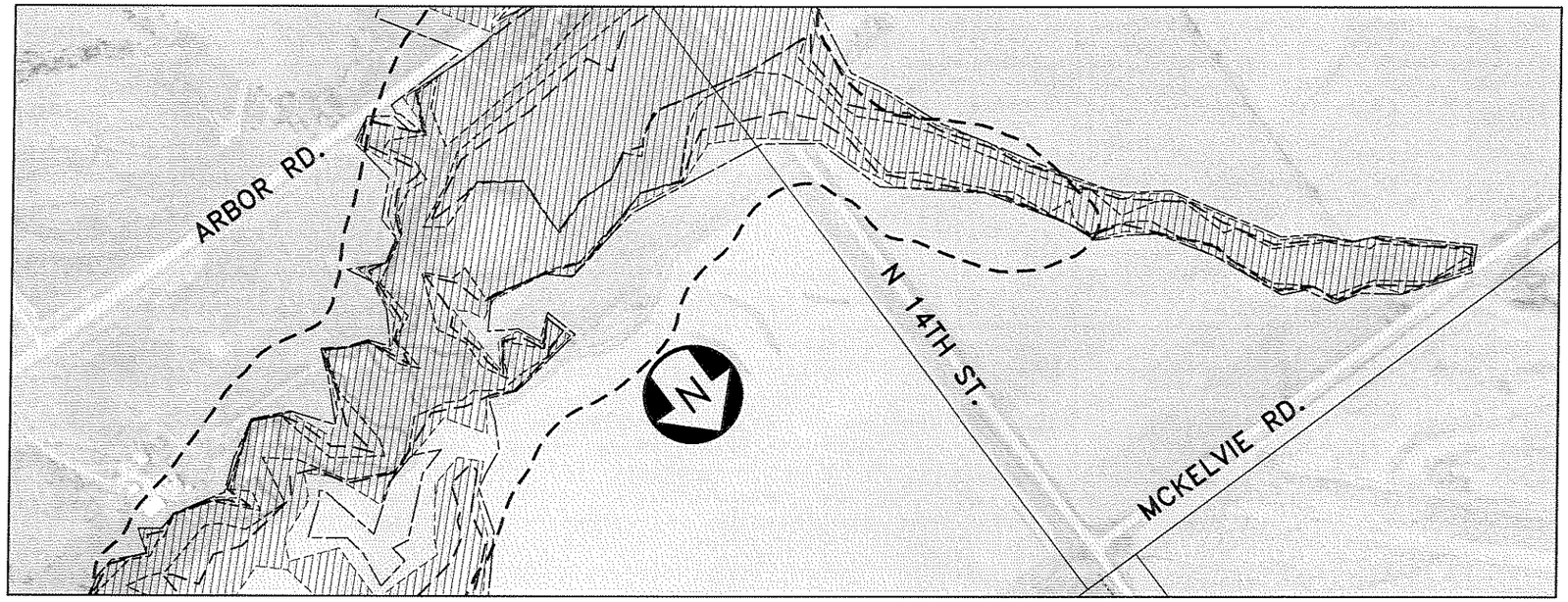
1-402-474-6311

Lincoln, Nebraska

Stream Segment 30 continued

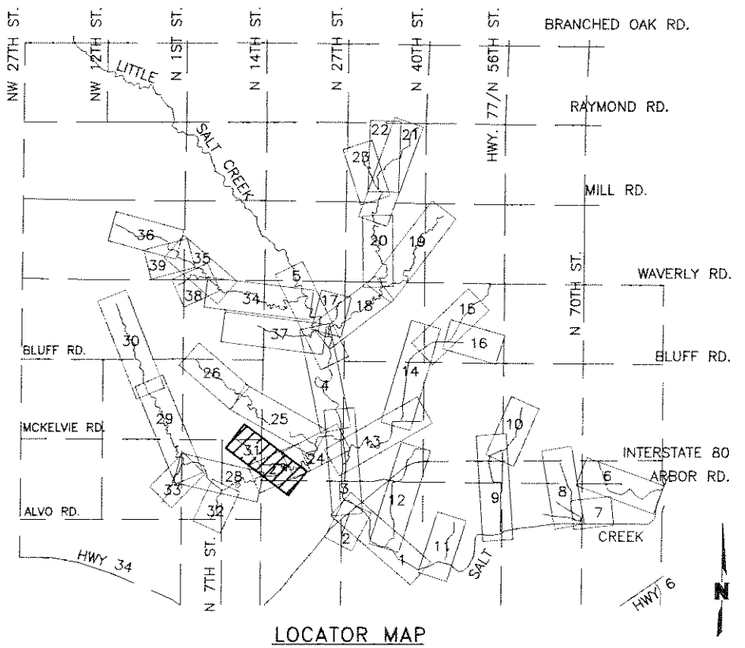
Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-13AI



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4



LOCATOR MAP

------ 2-YEAR
— — — 10-YEAR
100-YEAR
100-YEAR LITTLE SALT CREEK FIS
——— 500-YEAR

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Plan View of Stream Segment 31

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AJ

Photo 50: Looking upstream from North 14th Street.

Photo 51: Looking downstream from McKelvie Road.

Stream Segment 31 in UPZ N-4

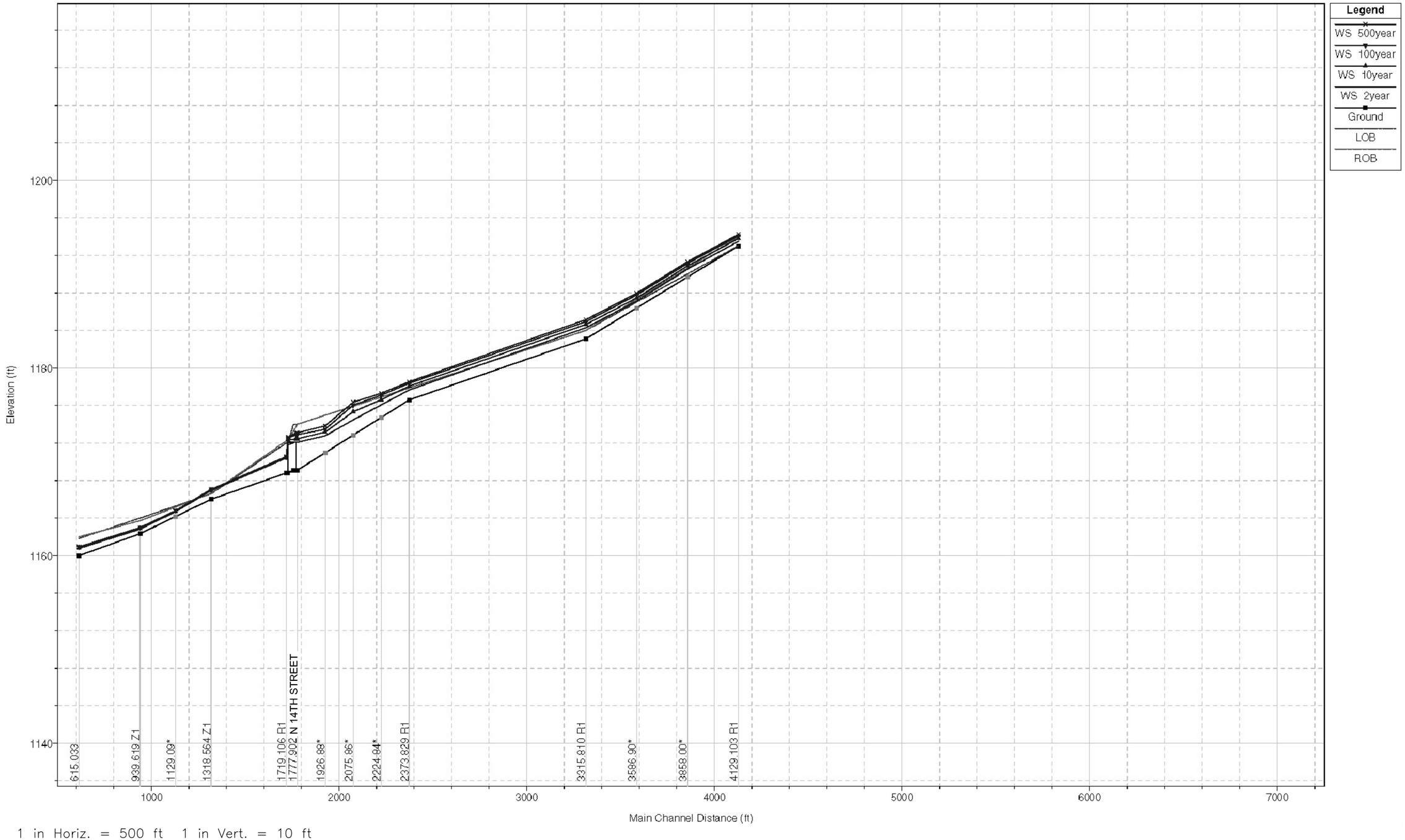
Evaluation

Stream Segment 31 begins at the confluence with the N-4 mainstem and extends nearly to McKelvie Road. North 14th Street crosses the channel.

- **Reach Stability** — This reach shows no signs of active stream bed and bank erosion, there is no well defined channel. The culvert at North 14th Street serves as a hard point in the channel. The channel has approximately a 2-year capacity and non-erosive velocities upstream of North 14th Street. Erosive velocities would occur below North 14th Street.
- **Flood Hazard** — Commodity crops, pasture and wetlands along the channel are subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain. Crops are planted though the channel.
- **Infrastructure** — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossing at North 14th Street does not meet DCM minimum requirements for overtopping (see the hydraulics section for more information on overtopping frequency). Flow in excess of culvert capacity follows the road ditch south to the mainstem channel.
- **Water Quality** — Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- **Land Use and Ownership** — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- **Multi-Purpose Use Potential** — A direct connection with Little Salt Creek enhances the N-4 mainstem's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability	✘		
Flood Hazard Potential			✘
Infrastructure		✘	
Water Quality			✘



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

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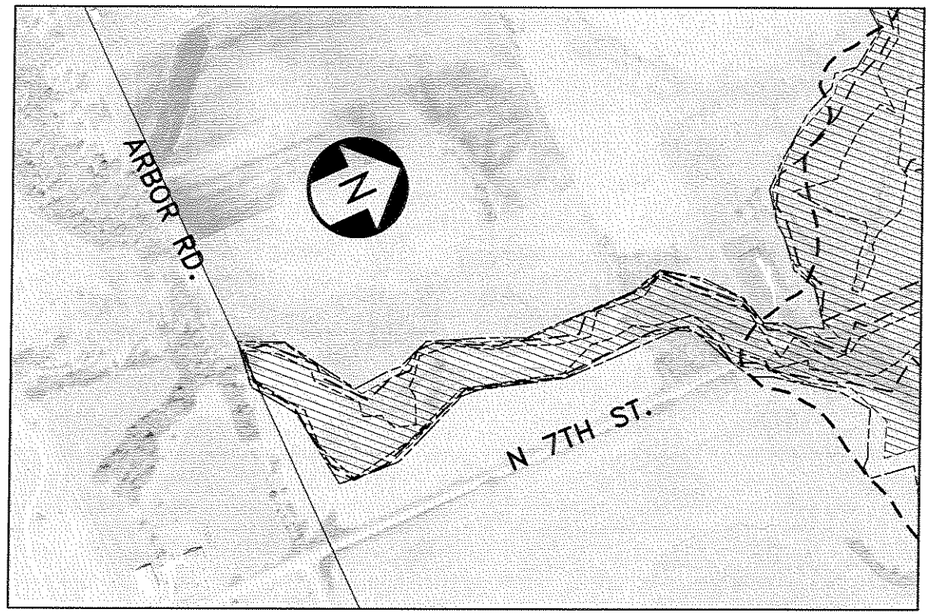
1-402-474-6311

Lincoln, Nebraska

Stream Segment 31

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

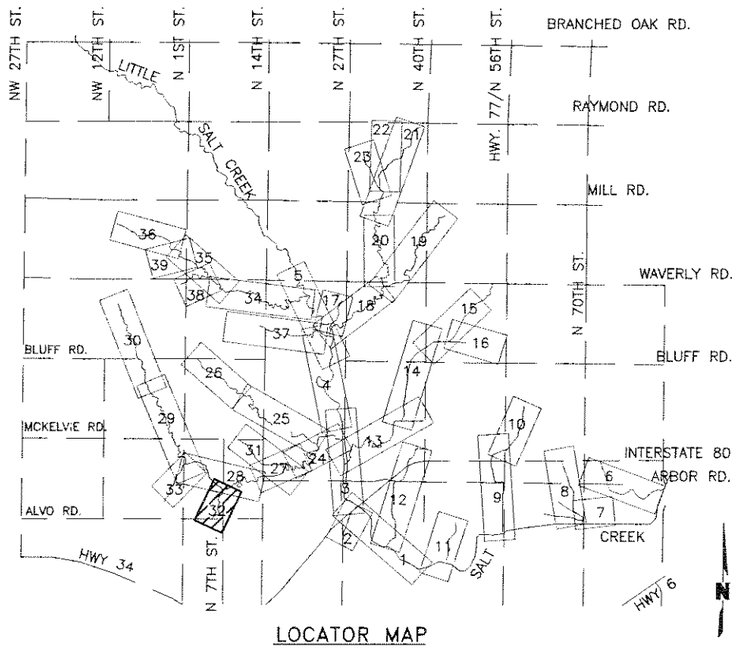
FIGURE: I-13AJ



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4

------ 2-YEAR
— — — 10-YEAR
▨ 100-YEAR
▬ ▬ 100-YEAR LITTLE SALT CREEK FIS
——— 500-YEAR



LOCATOR MAP

OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Plan View of Stream Segment 32 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AK

Photo 52: Looking upstream from North 7th Street.

Stream Segment 32 in UPZ N-4

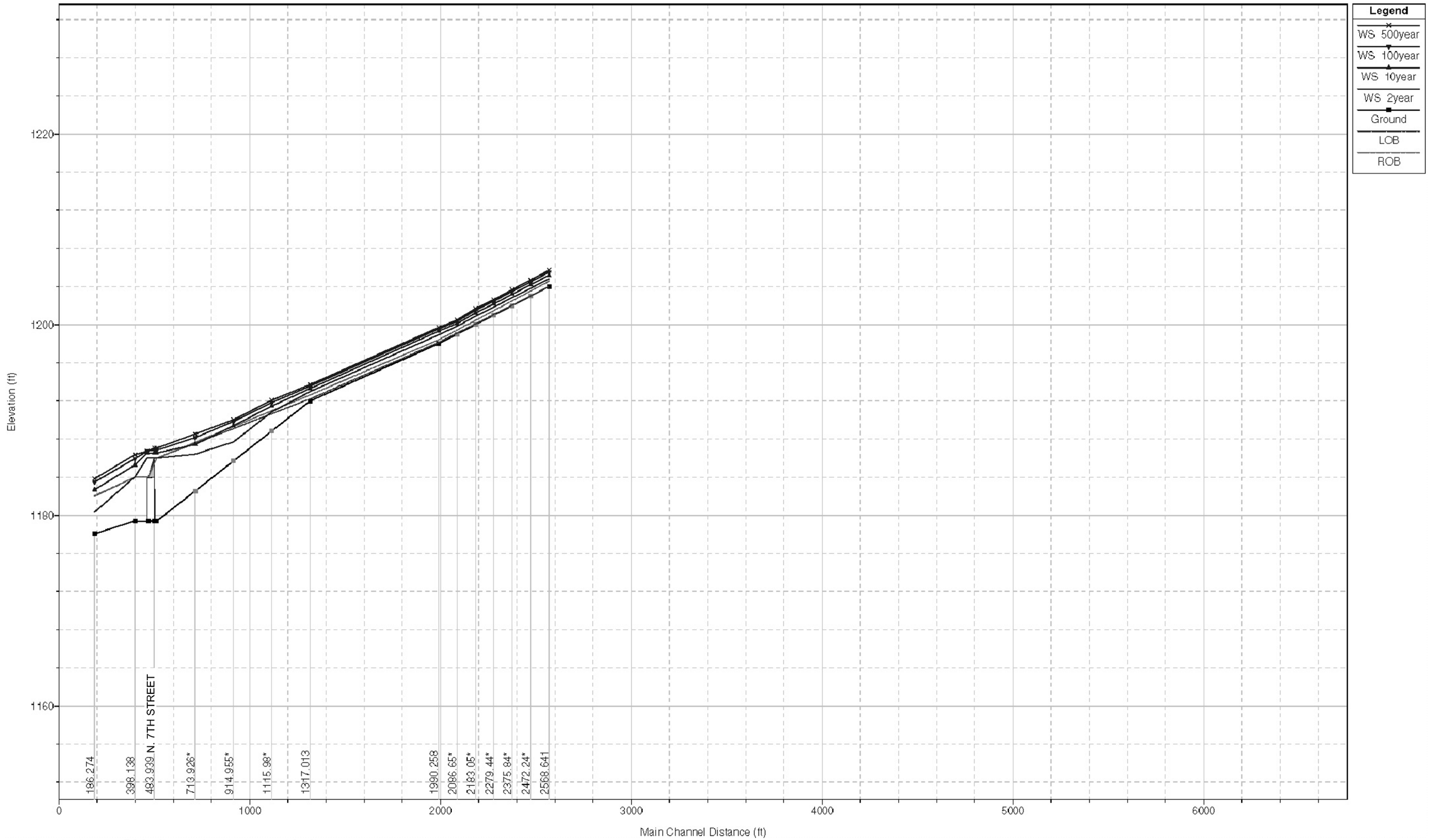
Evaluation

Stream Segment 32 begins at the confluence with the N-4 mainstem east of North 7th Street and extends nearly ½-mile south to Alvo Road extended.

- **Reach Stability** — This reach shows no signs of active stream bed and bank erosion. The culvert at North 7th Street serves as a hard point in the channel. The channel has approximately a 1-year capacity and non-erosive velocities.
- **Flood Hazard** — Commodity crops, pasture and wetlands along the channel are subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain.
- **Infrastructure** — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossing at North 7th Street does not meet DCM minimum overtopping requirements (see the hydraulics section for more information on overtopping frequency).
- **Water Quality** — Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- **Land Use and Ownership** — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- **Multi-Purpose Use Potential** — A direct connection with Little Salt Creek enhances the N-4 mainstem's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability	✘		
Flood Hazard Potential		✘	
Infrastructure		✘	
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

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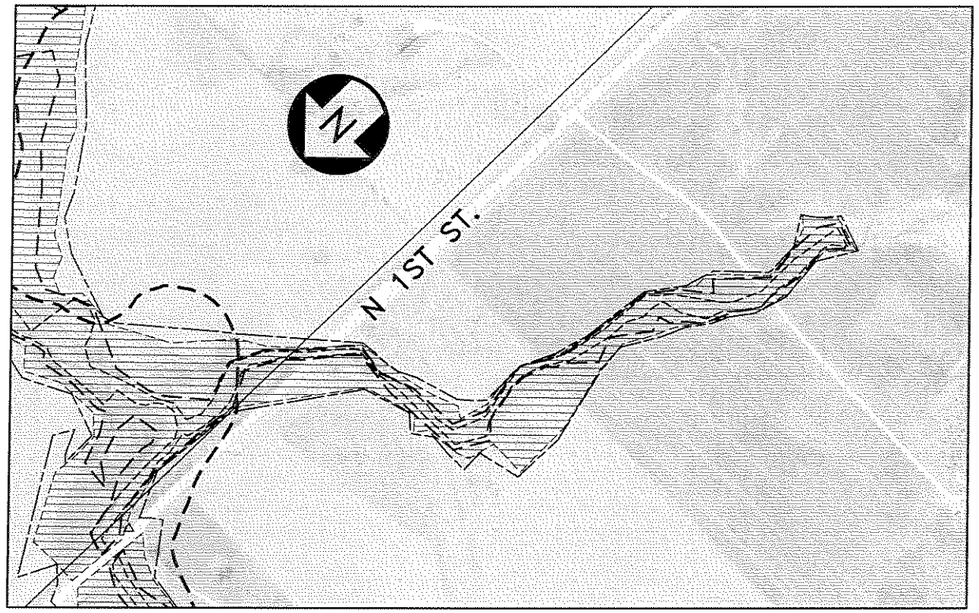
1111 Lincoln Mall
Lincoln, NE 68508
1-402-474-6311

Lincoln, Nebraska

Stream Segment 32

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

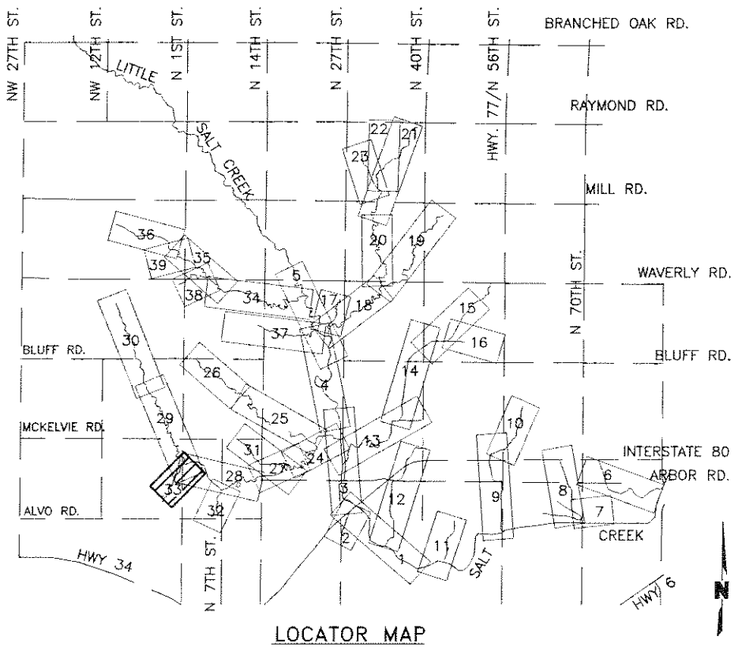
FIGURE: I-13AK



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4

------ 2-YEAR
— — — 10-YEAR
100-YEAR
100-YEAR LITTLE SALT CREEK FIS
—— 500-YEAR



LOCATOR MAP

OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Plan View of Stream Segment 33 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed	FIGURE: I-12AL

Photo 53: Looking downstream from North 1st Street.

Stream Segment 33 in UPZ N-4

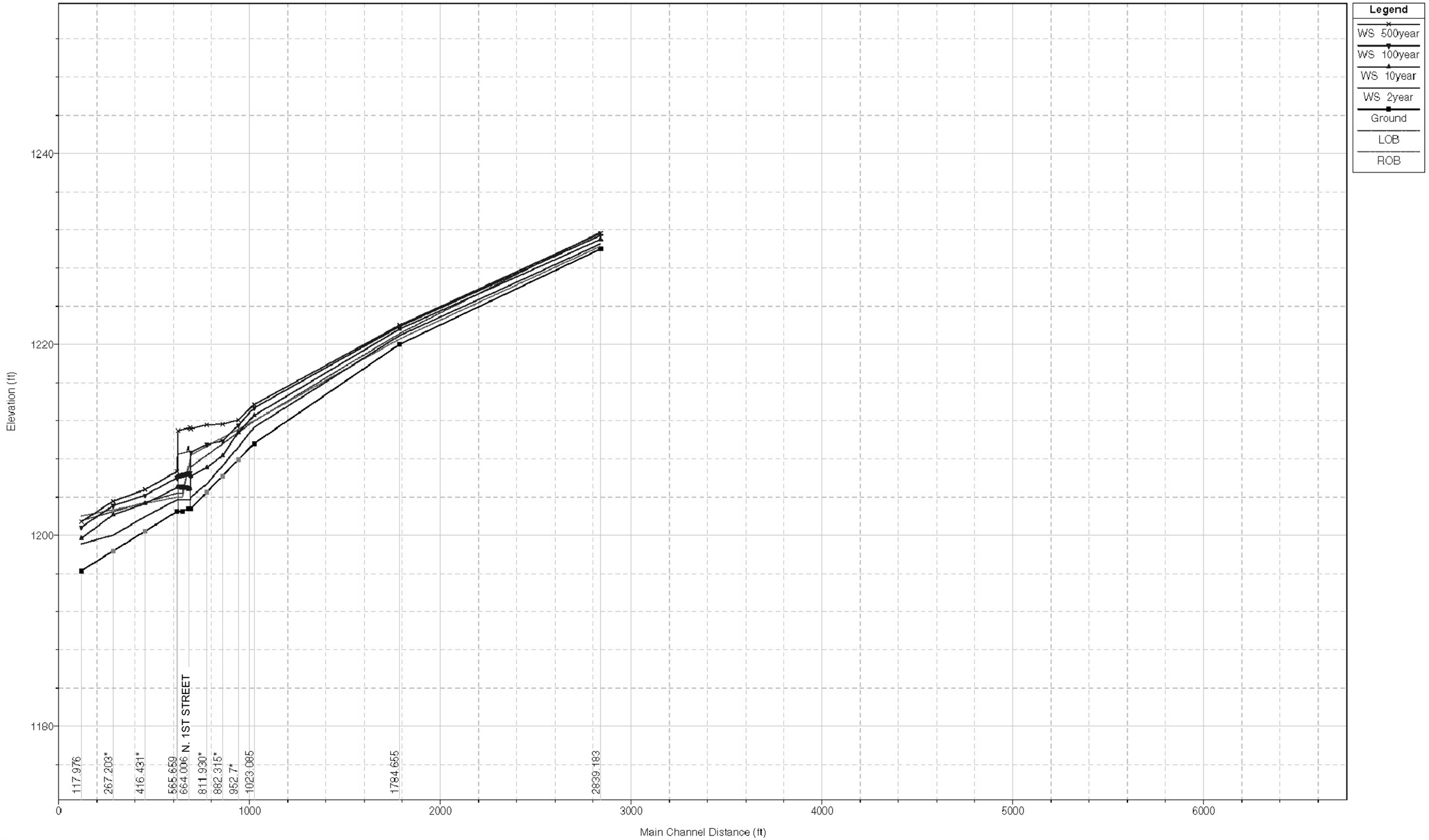
Evaluation

Stream Segment 33 begins at the confluence with the N-4 mainstem east of North 1st Street and extends westerly of N0rth 1st Street approximately ¼-mile. North 1st Street crosses the channel.

- Reach Stability — This reach shows no signs of active stream bed and bank erosion. The culvert at North 1st Street serves as a hard point in the channel. The channel has approximately a 1-year capacity and non-erosive velocities.
- Flood Hazard — Commodity crops, pasture and wetlands along the channel are subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain.
- Infrastructure — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossing at North 1st Street does meet DCM minimum overtopping requirements (see the hydraulics section for more information on overtopping frequency).
- **Water Quality** — **Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.**
- Land Use and Ownership — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- Multi-Purpose Use Potential — A direct connection with the N-4 mainstem enhances the viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

Threat Matrix

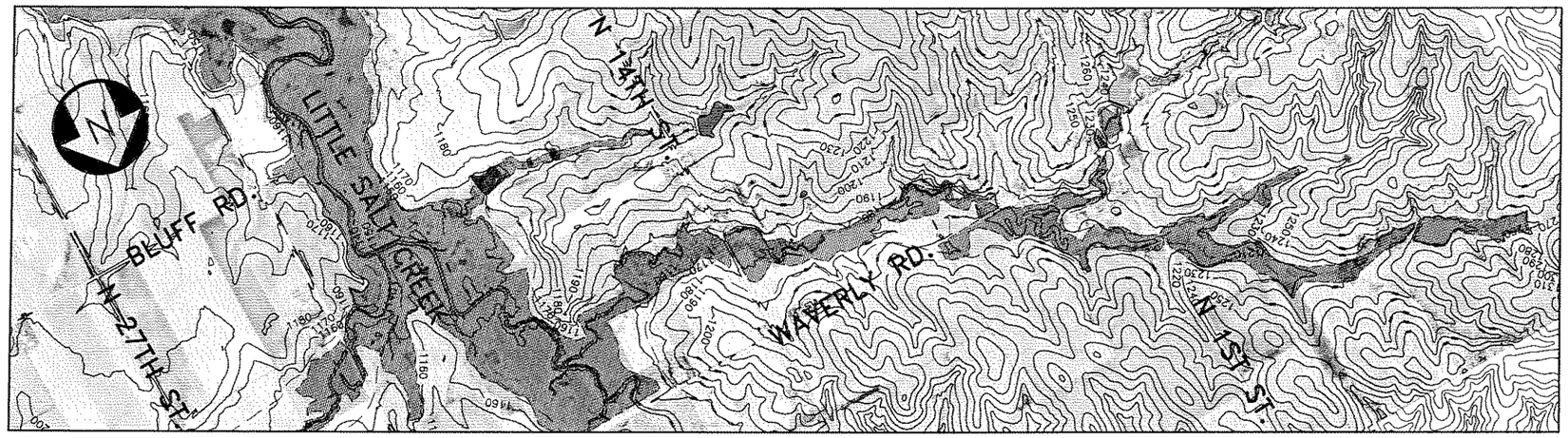
Issue	Degree of Threat		
	Low	Medium	High
Reach Stability	✘		
Flood Hazard Potential	✘		
Infrastructure		✘	
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

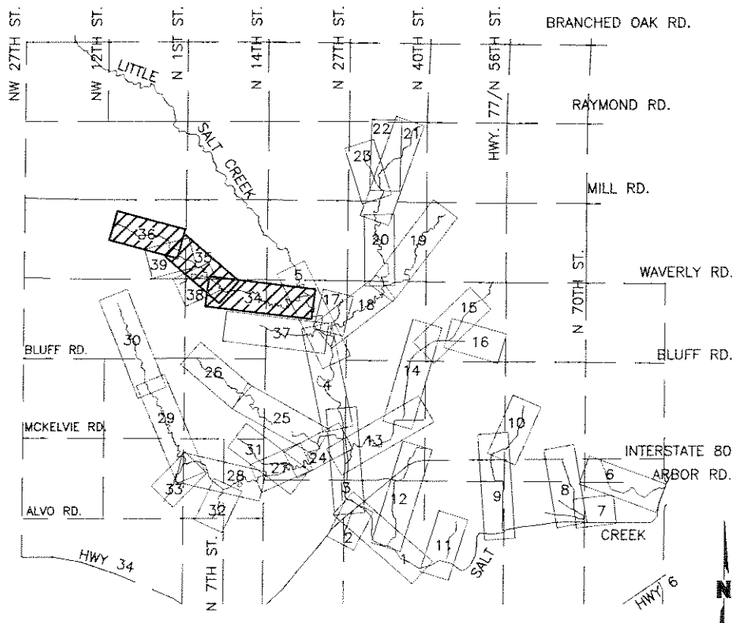
OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Stream Segment 33 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-13AL



0' 1000' 2000' 4000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4



LOCATOR MAP

100-YEAR

100-YEAR LITTLE SALT CREEK FIS

OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Plan View of UPZ N-5 Mainstem Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed	FIGURE: I-12AM

Stream Segment Evaluation

UPZ N-5 (Stream Segments 34 through 39)

Stream Segments 34, 35, and 36 make up the main branch of UPZ N-5. Starting from a confluence with Little Salt Creek, these segments proceed upstream to the vicinity of the intersection of Northwest 12th Street and Mill Road. This basin is in agricultural land use with scattered acreages and farmstead dwellings. The following evaluation applies to all of the stream segments in this basin unless otherwise noted.

Reach Stability

UPZ N-5 shows signs of active stream bed and bank erosion. The predominant factor causing this erosion is head cutting that is proceeding upstream from Little Salt Creek. The culverts at Waverly Road and 1st Street serve as hard points for the channel. Vertical stream banks can be seen from Waverly Road, 1st Street, and 14th Street. Although head cutting has proceeded up segment 34 from Little Salt Creek, the outlet structure of the detention pond near the bottom of this segment is serving as a hard point for the stream channel.

Flood Hazard Potential

The area adjacent to the streams in this basin are currently undeveloped. Flooding is confined to crop land. Commodities, crops, and pasture along the channel are subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain.

Threats to Infrastructure

The roadway crossings in this basin are listed below (see the hydraulics section for more information on overtopping frequency). Roadways subject to frequent overtopping require more frequent maintenance. There is no immediate threat apparent to overhead or buried utilities in the road ROW.

Stream Segment	Road Crossing	Meets DCM Criteria?
34	North 14th Street	Yes
35	Waverly Road	No
35	North 1st Street	No
37	North 14th Street*	Yes
38	Waverly Road*	Yes
38	North 1st Street*	Yes

*on a tribuary

Land Use and Ownership

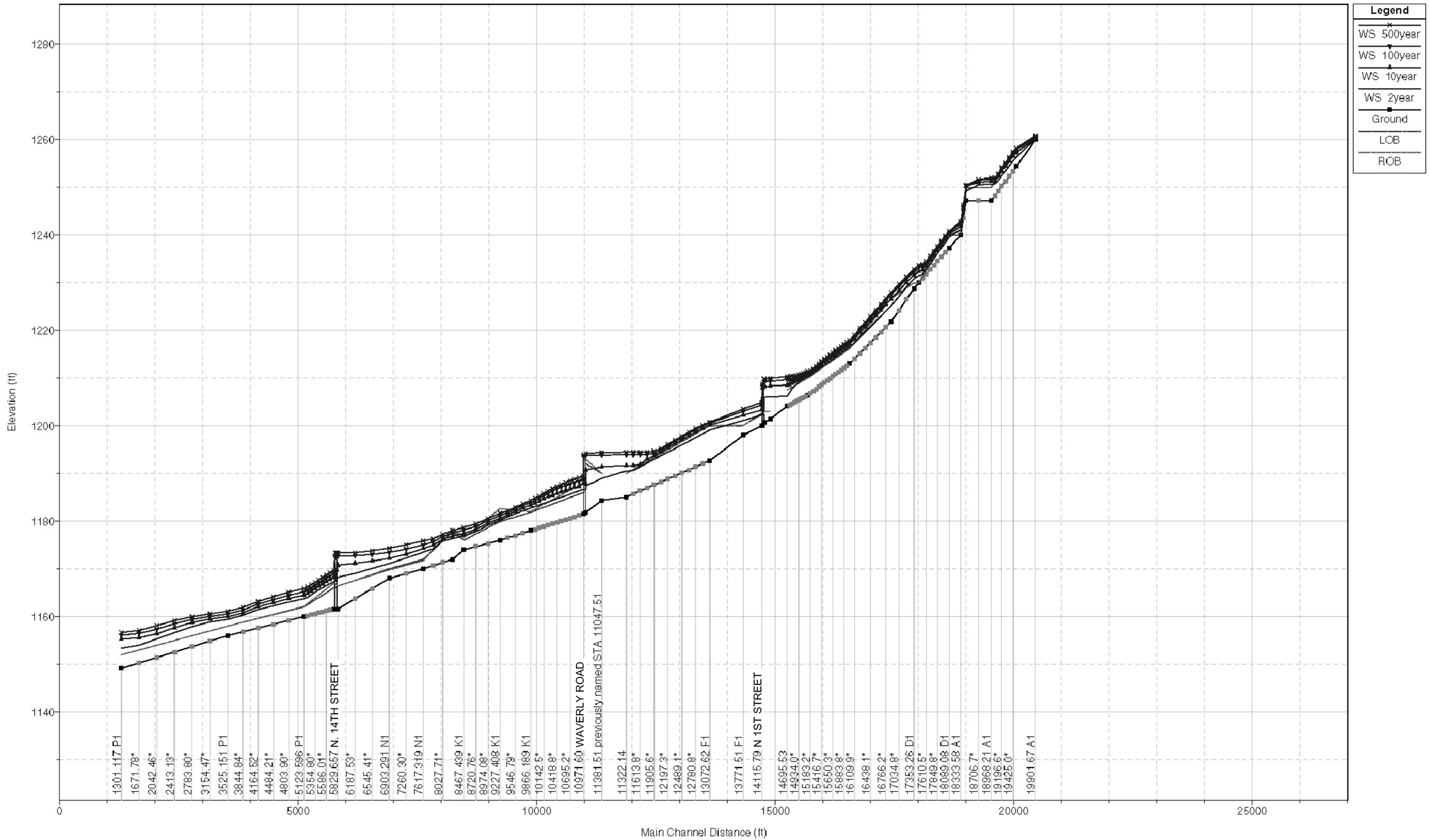
The land around these stream segments is privately held and is used for agricultural purposes.

Multi-Purpose Use Potential

Due to the presence of the potential Salt Creek Tiger Beetle habitat at the confluence of Salt Creek and the N-5 tributary, some restrictions on land use will likely be developed. Based on the Mayor's Salt Creek Tiger Beetle Cabinet Report, it is likely that open spaces (buffer zones) will be created or maintained. These areas may be used as protected habitat areas or ecological study areas.

Water Quality

Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Natural riparian vegetation is present throughout the length of the basin.



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

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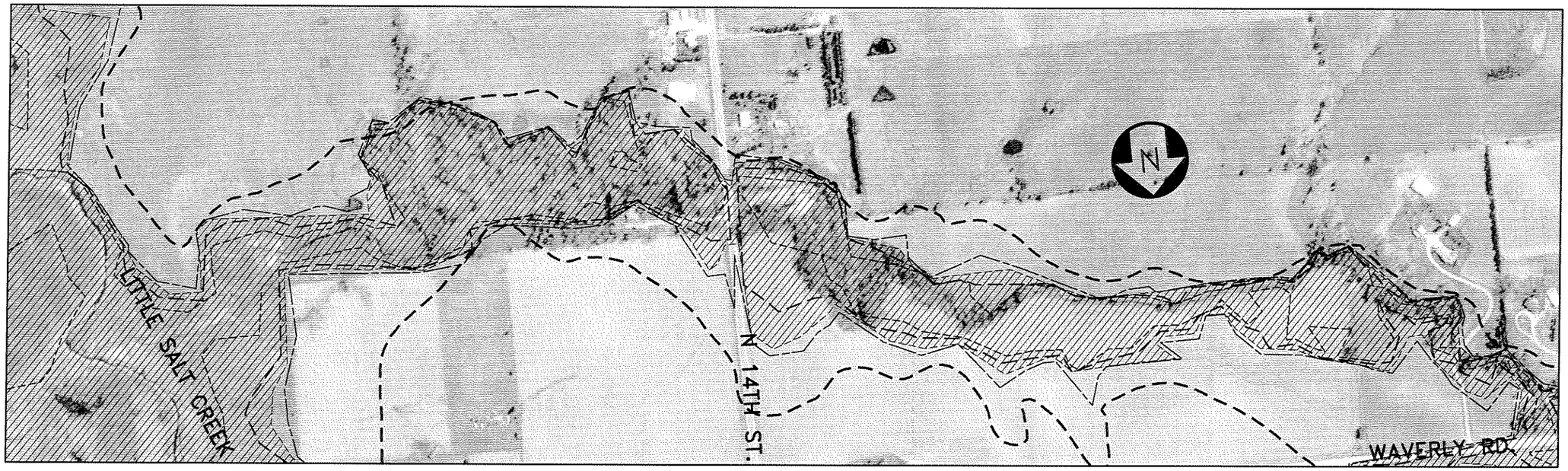
UPZ N-5 Mainstem

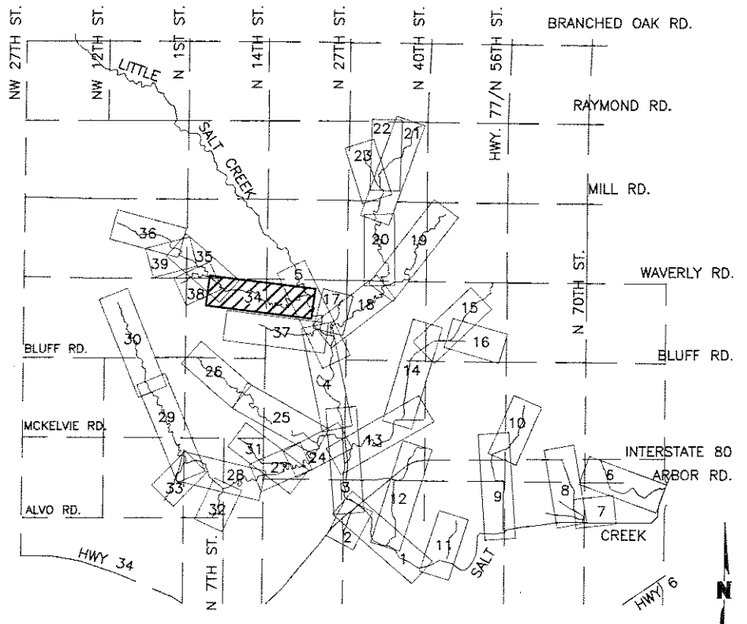
Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-13AM



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4



LOCATOR MAP

------ 2-YEAR
— — — 10-YEAR
100-YEAR
▬ ▬ ▬ 100-YEAR LITTLE SALT CREEK FIS
——— 500-YEAR

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Plan View of Stream Segment 34

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AN

Photo 54: Looking downstream from 14th Street.

Photo 55: Looking upstream from 14th Street.

Stream Segment 34 in UPZ N-5

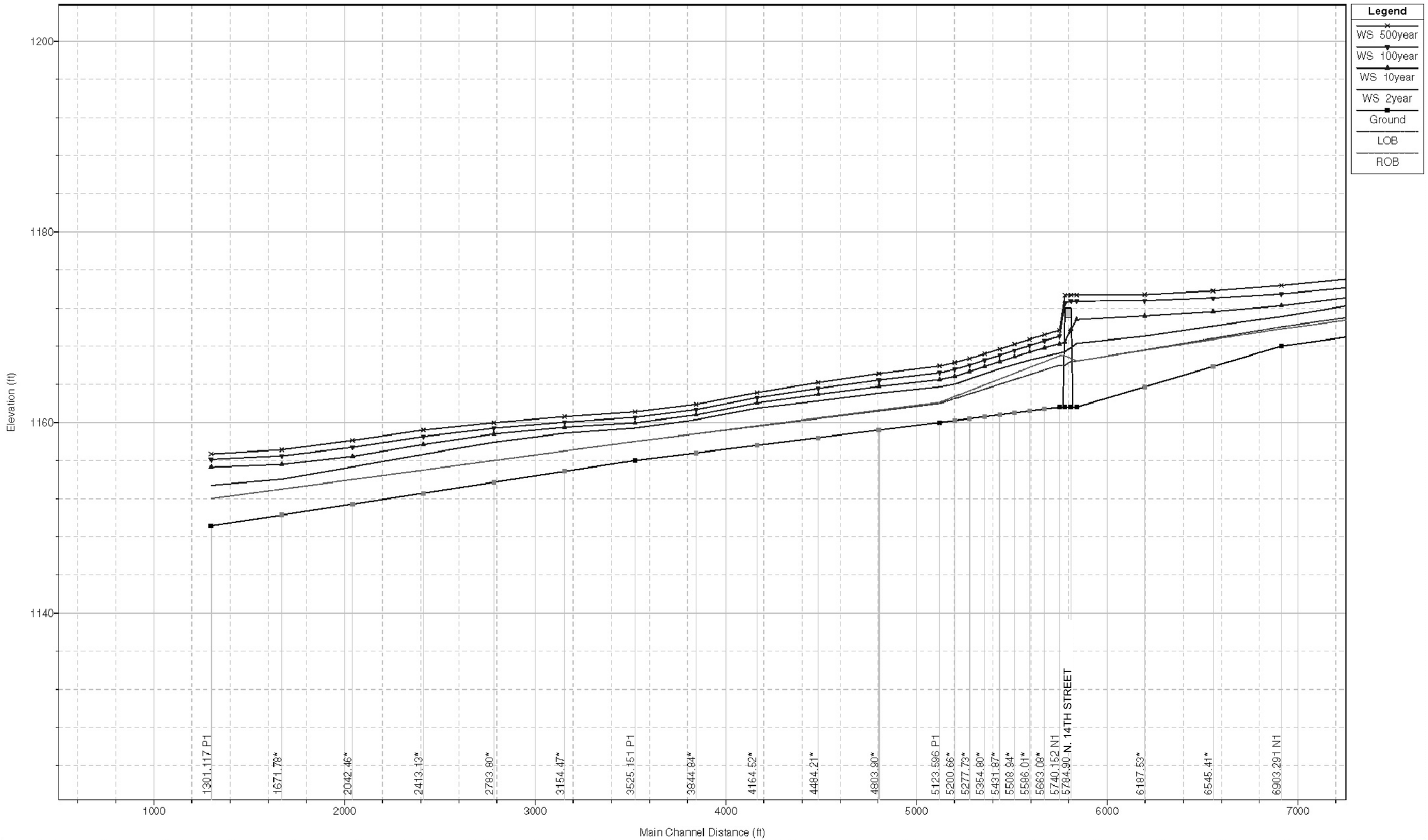
Evaluation

Stream Segment 34 begins at the confluence with Little Salt Creek and extends nearly to Waverly Road. North 14th Street crosses the channel.

- **Reach Stability** — This reach shows signs of active stream bed and bank erosion near the confluence with Little Salt Creek. The predominant factor causing this erosion is head cutting that is proceeding upstream from Little Salt Creek. The culvert at North 14th Street serves as a hard point in the channel. Erosive velocities occur during the 500-year storm. The channel has an approximate 1-year capacity and non-erosive velocities, except erosive velocities would occur during the 500-year storm downstream of North 14th Street.
- **Flood Hazard** — Commodity crops, pasture, and wetlands along the channel are subject to flood hazard. A building appears to be near within the limits of the 100-year floodplain east of 14th Street. Building low opening elevations would need to be confirmed to accurately determine flood hazard exposure on the properties.
- **Infrastructure** — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossing at North 14th Street meets DCM minimum overtopping requirements (see the hydraulics section for more information on overtopping frequency).
- **Water Quality** — Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- **Land Use and Ownership** — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- **Multi-Purpose Use Potential** — These areas contain saline wetlands and may be used as protected habitat areas or ecological study areas. A direct connection with Little Salt Creek enhances the N-5 mainstem's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

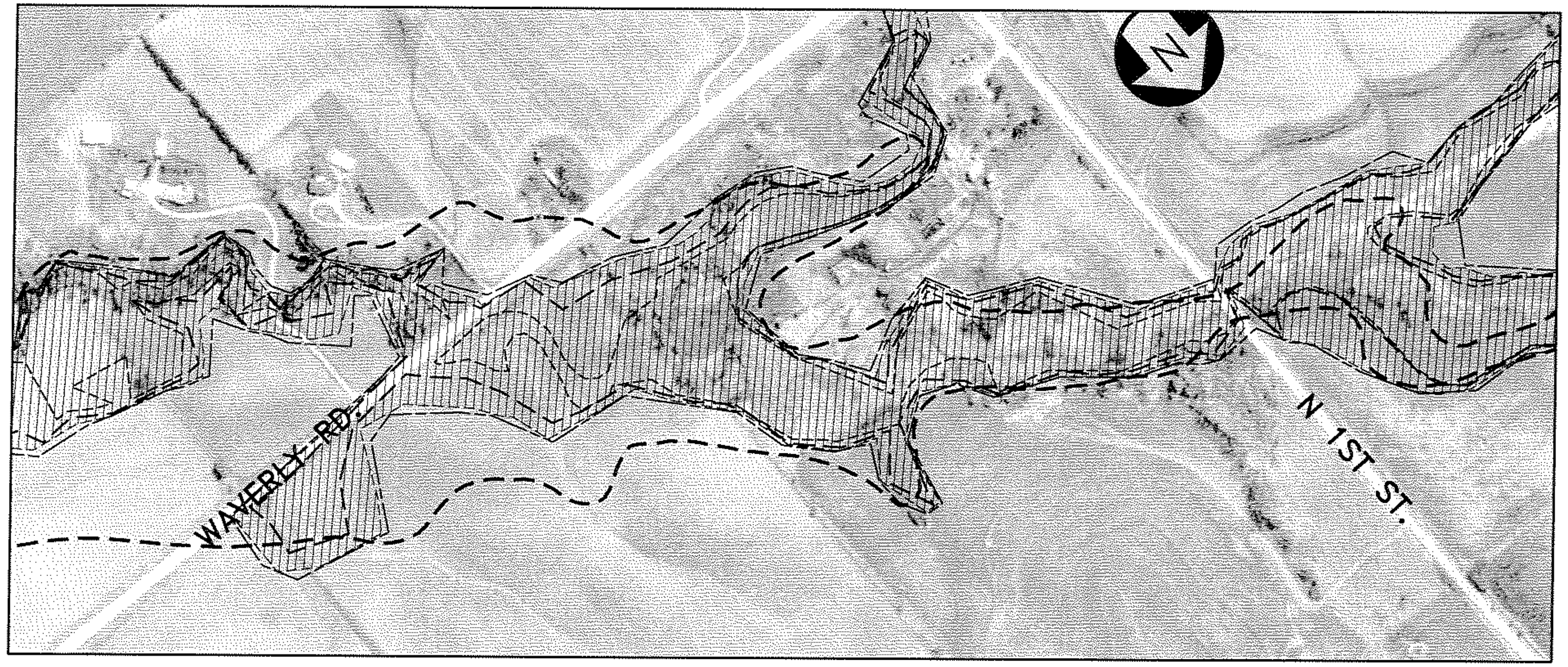
Threat Matrix

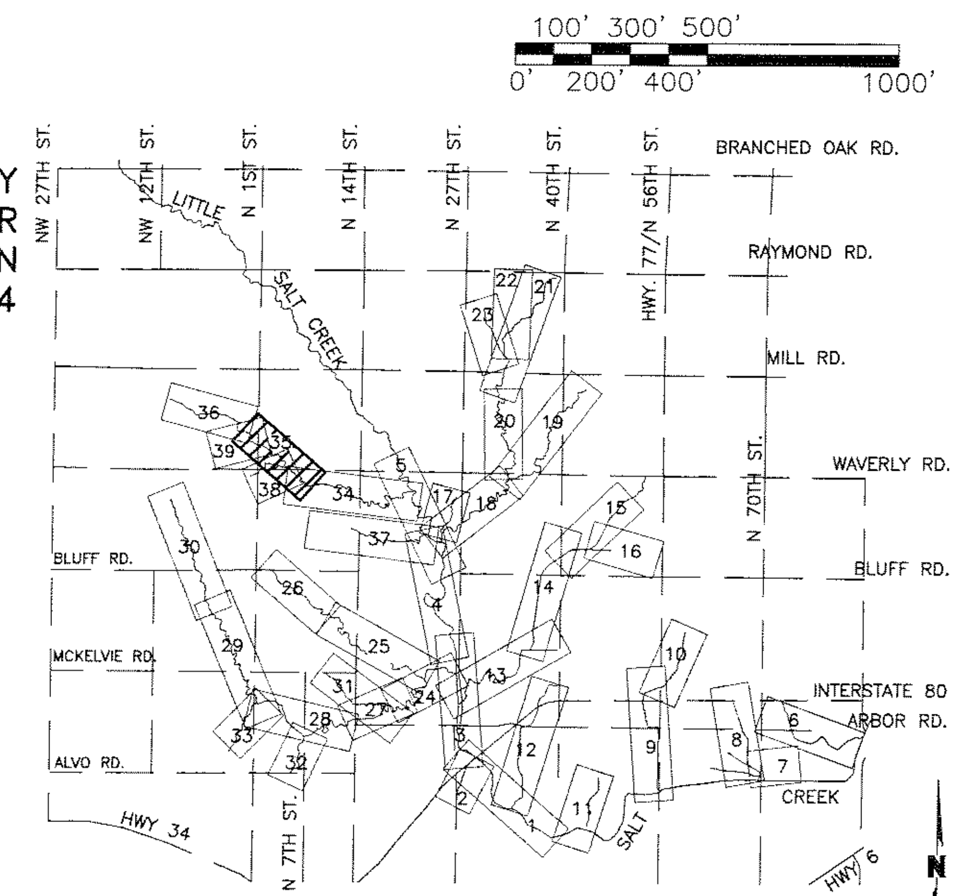
Issue	Degree of Threat		
	Low	Medium	High
Reach Stability			✘
Flood Hazard Potential		✘	
Infrastructure		✘	
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Stream Segment 34 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed	FIGURE: I-13AN





LOCATION OF ENVIRONMENTALLY
SENSITIVE WETLAND AND WATER
AREAS ARE SHOWN ON
FIGURES I-3 & I-4

LOCATOR MAP

- - - - - - 2-YEAR
— — — 10-YEAR
▨ 100-YEAR
▬ ▬ ▬ 100-YEAR LITTLE SALT CREEK FIS
—·—·— 500-YEAR

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Plan View of Stream Segment 35

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AO

Photo 56: Looking downstream from Waverly Road.

Photo 57: Looking downstream at the North 1st Street culvert outlet.

Stream Segment 35 in UPZ N-5

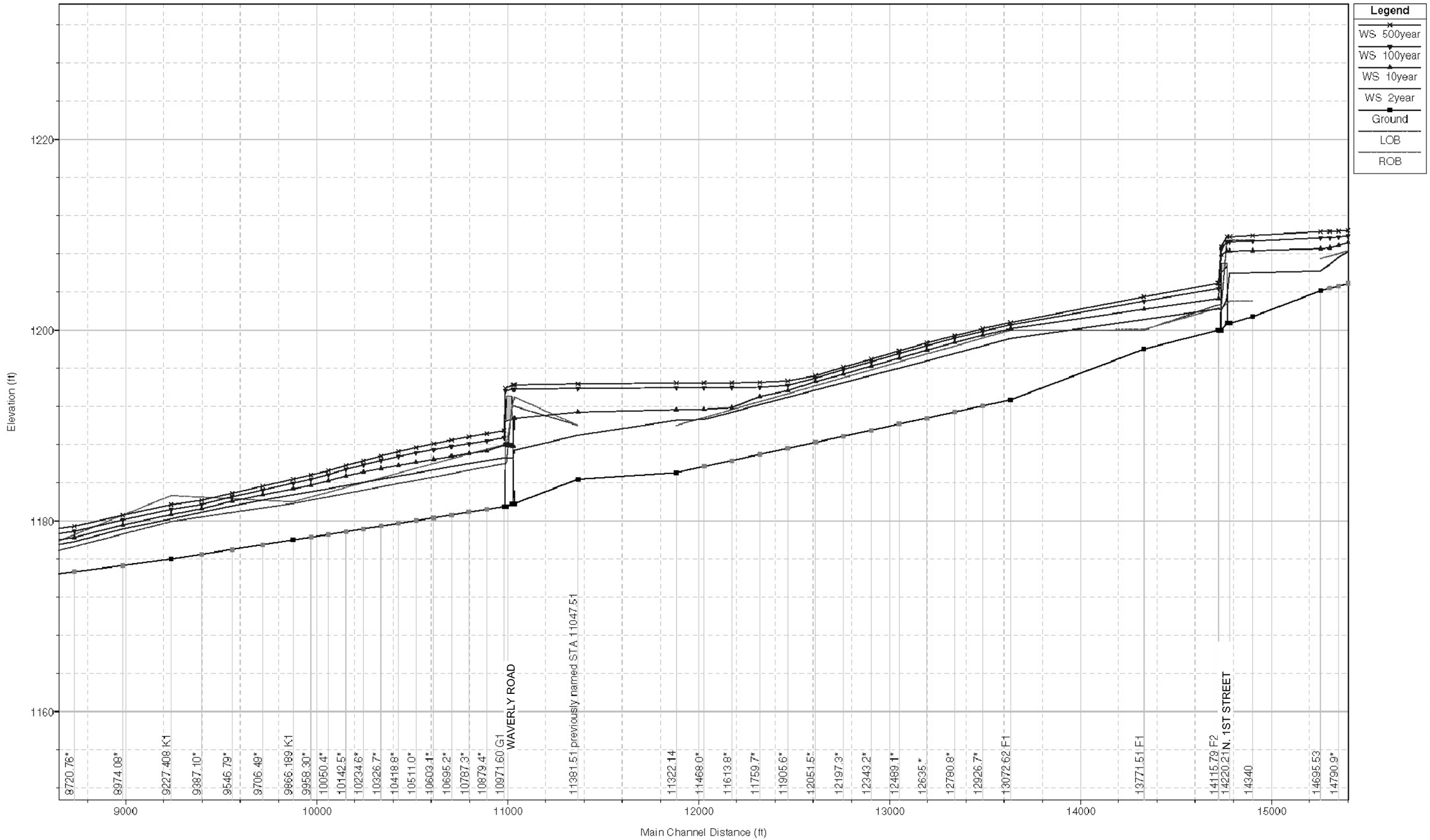
Evaluation

Stream Segment 35 begins below Waverly Road and extends through North 1st Street. Waverly Road and North 1st Street cross the channel.

- Reach Stability — This reach shows signs of active stream bed and bank erosion. There is some scour at the outlet of the North 1st Street culvert. The channel has an approximate 2-year capacity and non-erosive velocities, except erosive velocities would occur during the 500-year flood downstream of Waverly Road. The culverts at Waverly Road and at North 1st Street serve as hard points in the channel.
- Flood Hazard — Commodity crops, pasture, and wetlands along the channel are subject to flood hazard. A farmstead is surrounded by flood waters but no buildings appear to be within the limits of the 100-year floodplain. Building low opening elevations would need to be confirmed to accurately determine flood hazard exposure on the properties.
- Infrastructure — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossings at Waverly Road and at North 1st Street do not meet DCM minimum overtopping requirements (see the hydraulics section for more information on overtopping frequency).
- **Water Quality** — **Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.**
- Land Use and Ownership — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- Multi-Purpose Use Potential — A direct connection with Little Salt Creek enhances the N-5 mainstem's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability			✘
Flood Hazard Potential		✘	
Infrastructure		✘	
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

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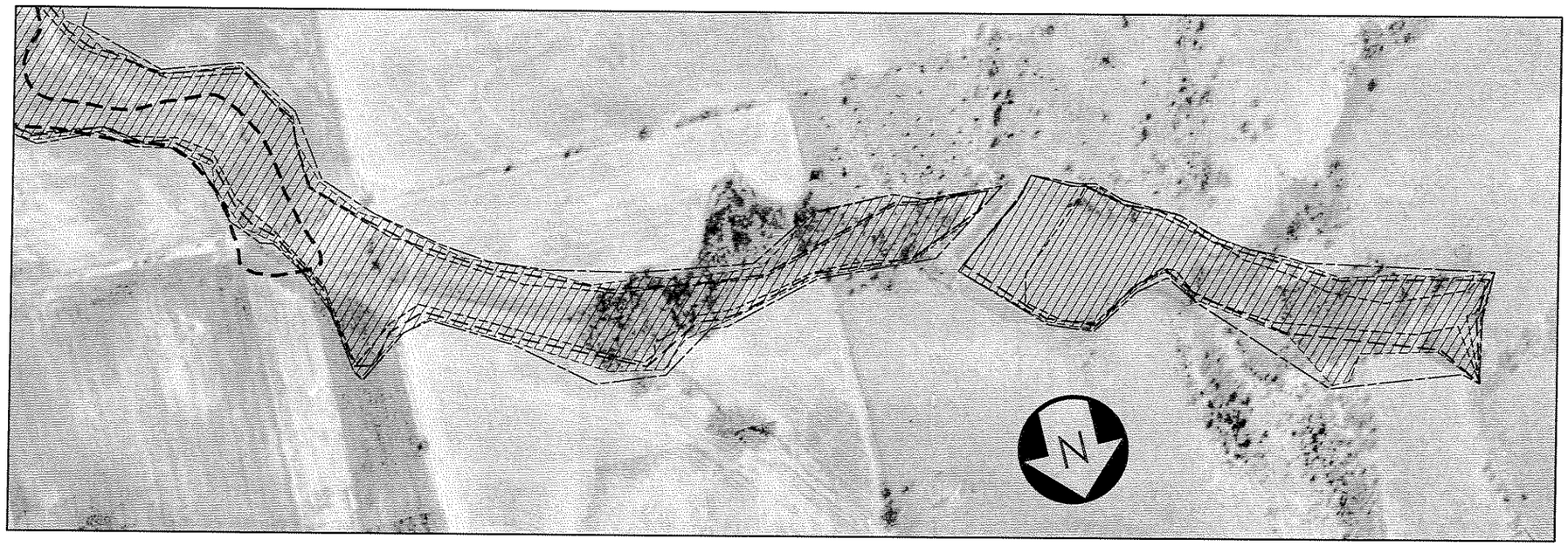
Stream Segment 35

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

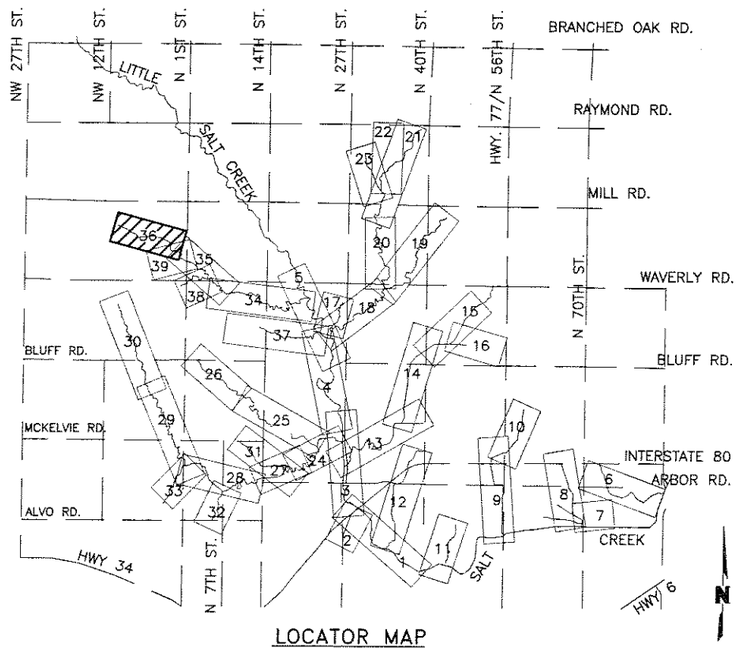
FIGURE: I-13AO



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4

------ 2-YEAR
– – – 10-YEAR
▨ 100-YEAR
▬ ▬ 100-YEAR LITTLE SALT CREEK FIS
—— 500-YEAR



LOCATOR MAP

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Plan View of Stream Segment 36

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AP

Photo 58: Looking upstream from North 14th Street.

Photo 59: Looking upstream at the channel from North 14th Street.

Stream Segment 36 in UPZ N-5

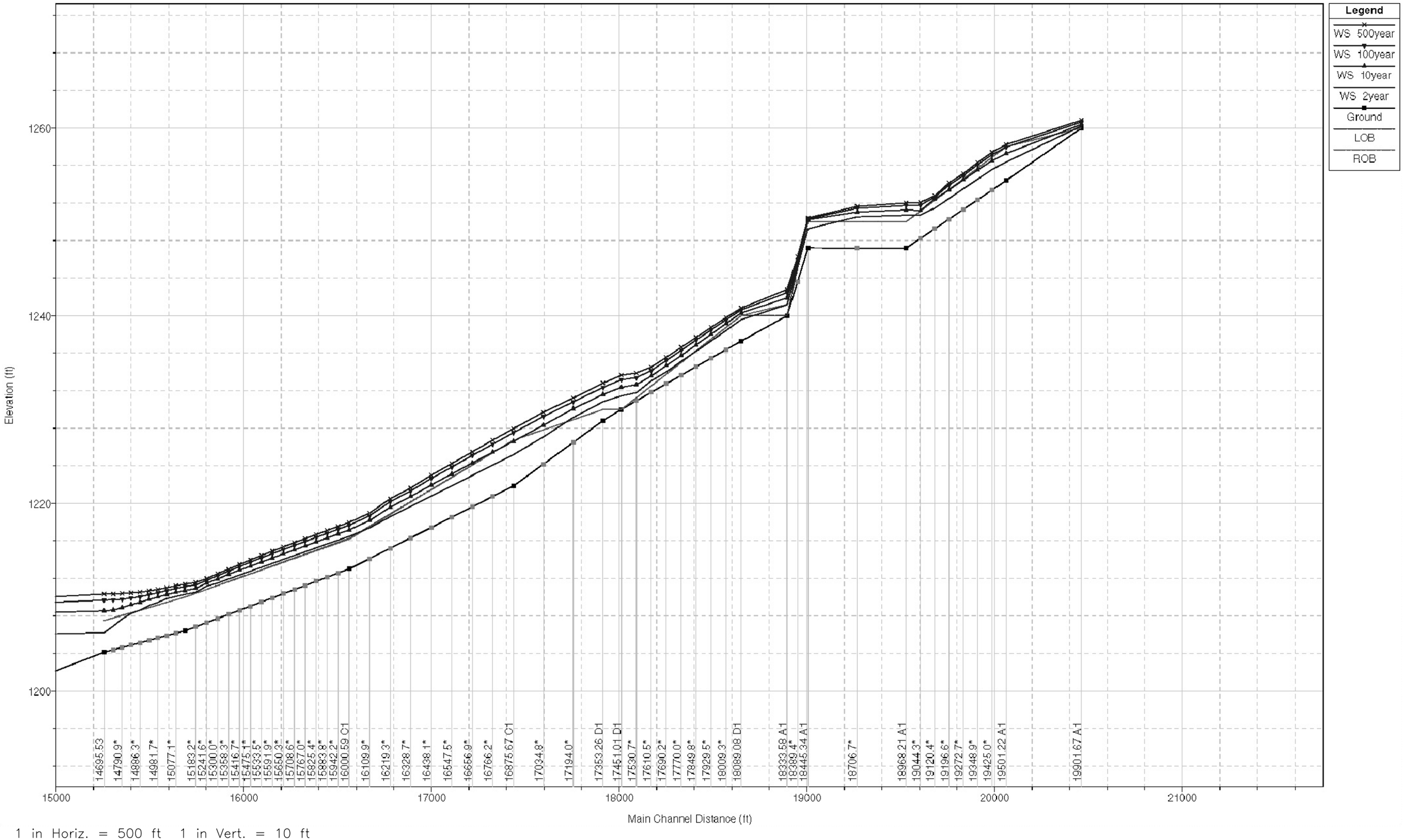
Evaluation

Stream Segment 36 begins upstream of North 1st Street and extends northwesterly 1/2 mile. No roadways cross the channel. A grade stabilization structure is located near the upper end of the segment.

- Reach Stability: This reach shows no signs of active stream bed and bank erosion. The channel has an approximate 2-year capacity and non-erosive velocities, except erosive velocities would occur during the 100- and 500-year floods below the grade stabilization pond.
- Flood Hazard: Commodities, crops, pasture, and wetlands along the channel are subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain.
- Infrastructure: There are no apparent overhead or buried utilities in this segment.
- Water Quality: Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- Land Use and Ownership: The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- Multi-Purpose Use Potential: A direct connection with Little Salt Creek enhances the N-5 mainstem's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

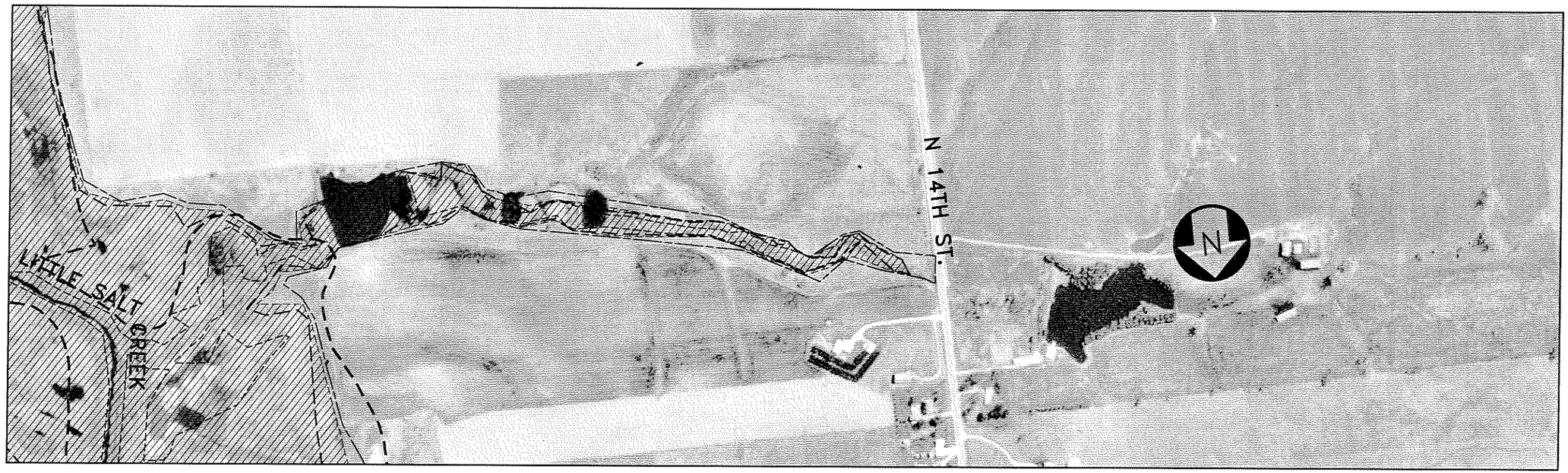
Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability	✘		
Flood Hazard Potential	✘		
Infrastructure	✘		
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

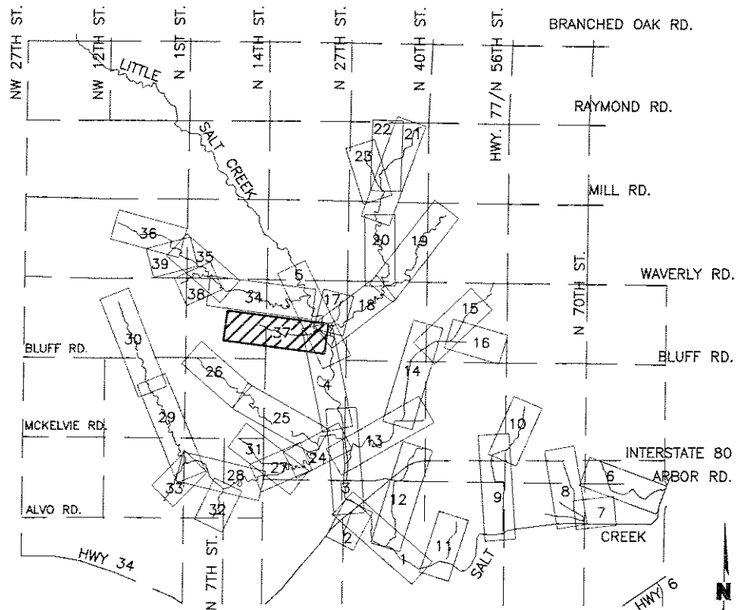
OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Stream Segment 36 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed	FIGURE: I-13AP



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4

------ 2-YEAR
— — — 10-YEAR
100-YEAR
▬ ▬ ▬ 100-YEAR LITTLE SALT CREEK FIS
——— 500-YEAR



LOCATOR MAP

OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Plan View of Stream Segment 37 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AQ

Photo 60: Looking downstream from North 14th Street.

Photo 61: Looking upstream from Little Salt Creek.

Stream Segment 37 in UPZ N-5

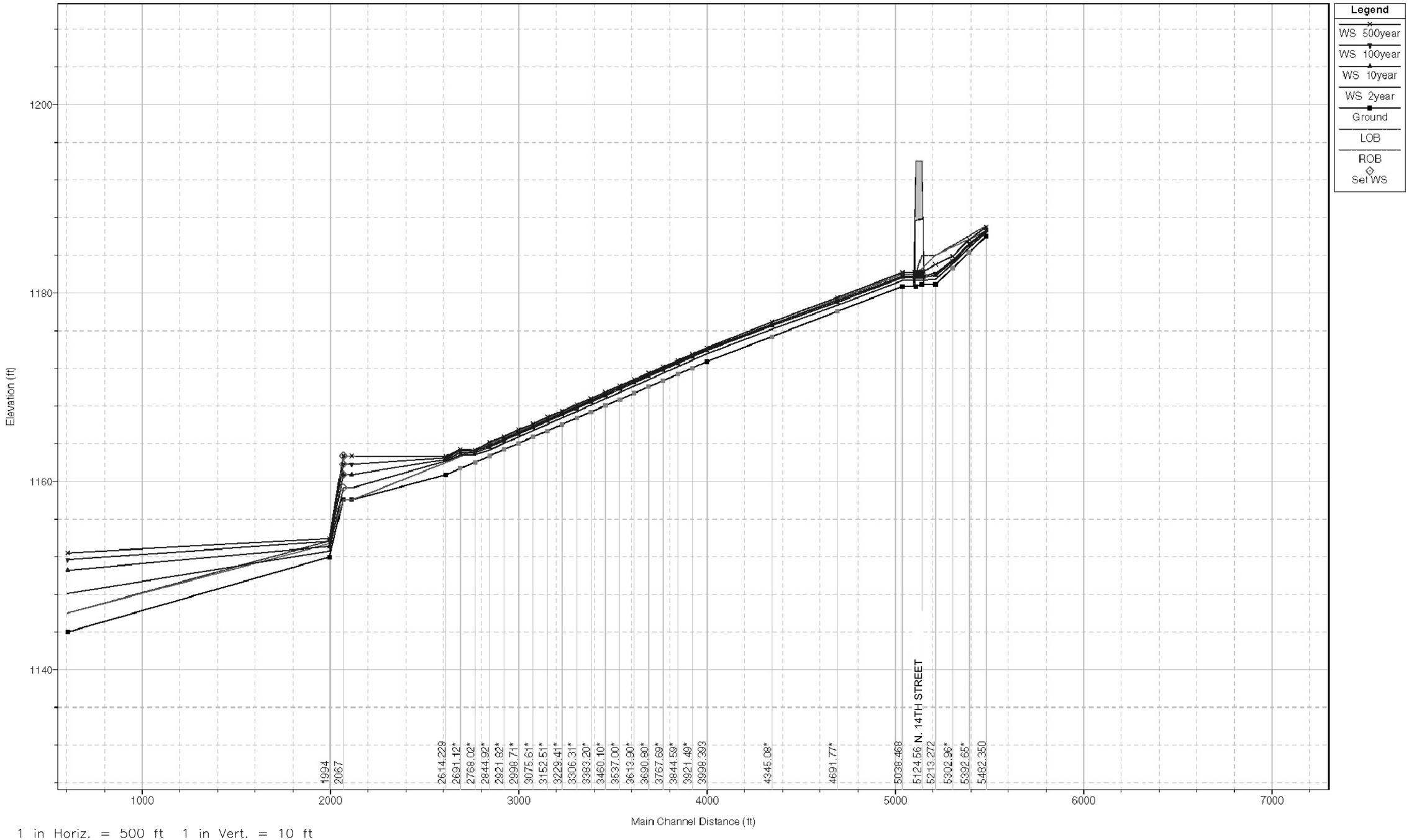
Evaluation

Stream Segment 37 begins at the confluence with Little Salt Creek and extends just beyond North 14th Street. A grade stabilization structure and North 14th Street cross the channel.

- Reach Stability — This reach shows signs of active stream bed and bank erosion near the confluence with Little Salt Creek. The predominant factor causing this erosion is head cutting proceeding upstream from Little Salt Creek. The grade stabilization structure serves as a hard point in the channel. The channel has an approximate 2-year capacity and non-erosive velocities.
- Flood Hazard — Commodity crops, pasture and wetlands along the channel are subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain.
- Infrastructure — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossing at North 14th Street does meet DCM minimum overtopping requirements (see the hydraulics section for more information on overtopping frequency).
- Water Quality — Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- Land Use and Ownership — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP. The stream segment is projected to be environmental resources land use in the LLCCP.
- Multi-Purpose Use Potential — These areas contain saline wetlands and may be used as protected habitat areas or ecological study areas. A direct connection with Little Salt Creek enhances the N-5 mainstem's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

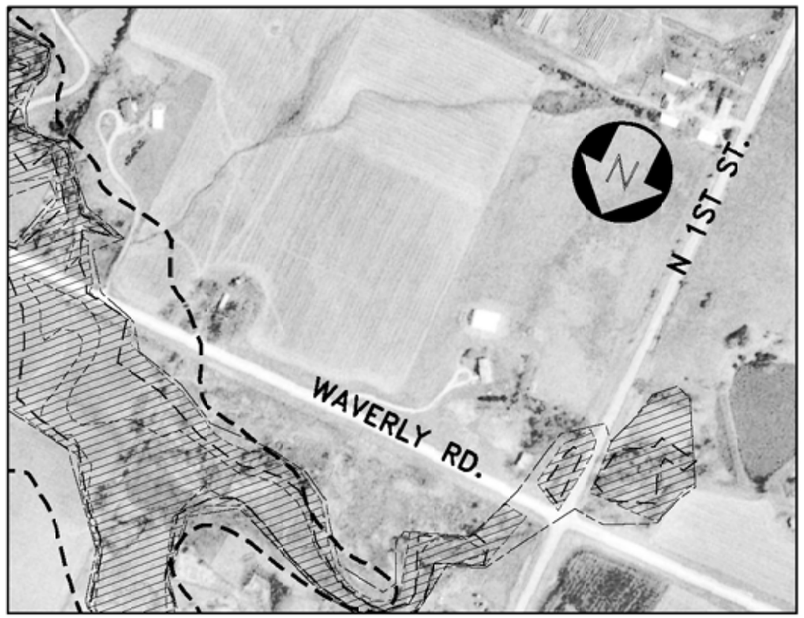
Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability			✘
Flood Hazard Potential	✘		
Infrastructure		✘	
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

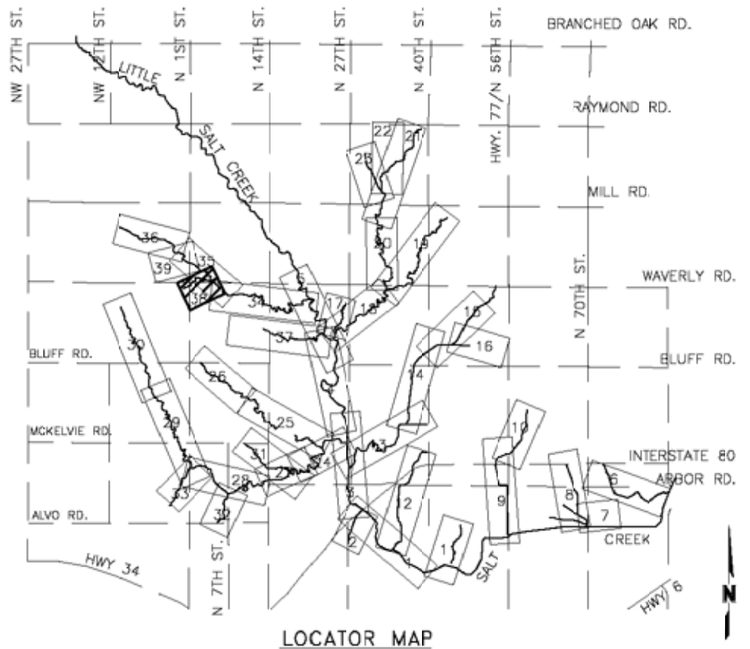
OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Stream Segment 37 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed	FIGURE: I-13AQ



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4

------ 2-YEAR
– – – 10-YEAR
▭ 100-YEAR
▬ ▬ 100-YEAR LITTLE SALT CREEK FIS
—·— 500-YEAR



LOCATOR MAP

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Plan View of Stream Segment 38

Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-12AR

Photo 62: Looking downstream from Waverly Road.

Photo 63: Looking upstream from North 1st Street.

Stream Segment 38 in UPZ N-5

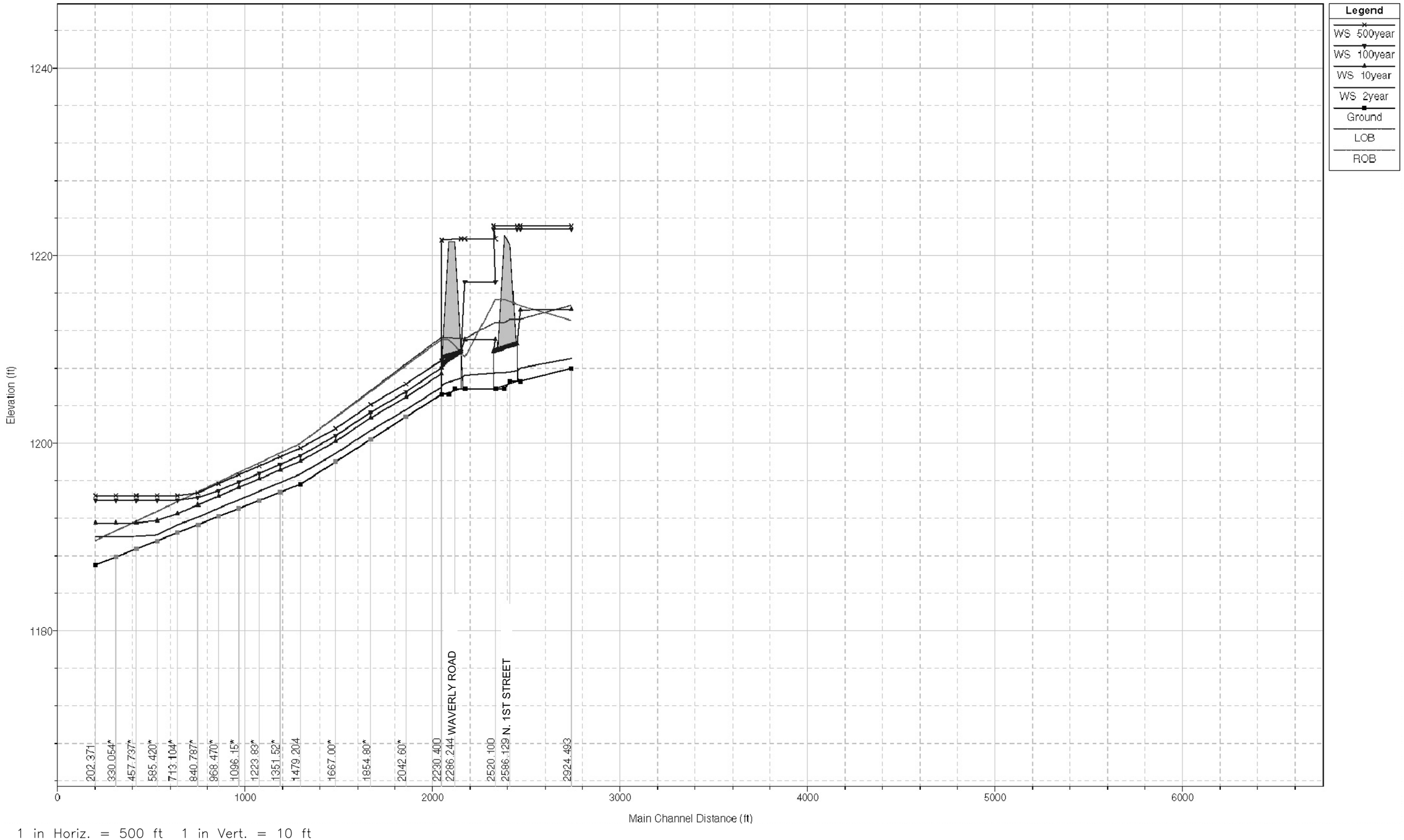
Evaluation

Stream Segment 38 begins at the confluence with the N-5 mainstem near the intersection of North 1st Street and Waverly Road and extends west of North 1st Street. Waverly Road and North 1st Street cross the channel.

- Reach Stability — This reach shows no signs of active stream bed and bank erosion. The culverts at Waverly Road and North 27th Street serve as hard points in the channel. The channel has approximately a 100-year capacity and non-erosive velocities.
- Flood Hazard — The road ditch along the channel is subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain.
- Infrastructure — There is no immediate threat apparent to overhead or buried utilities in the road ROW. The roadway crossings at Waverly Road and at North 1st Street meet DCM minimum overtopping requirements (see the hydraulics section for more information on overtopping frequency).
- Water Quality — Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- Land Use and Ownership — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP.
- Multi-Purpose Use Potential — A direct connection with the N-5 mainstem enhances the reach's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability	✘		
Flood Hazard Potential	✘		
Infrastructure		✘	
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

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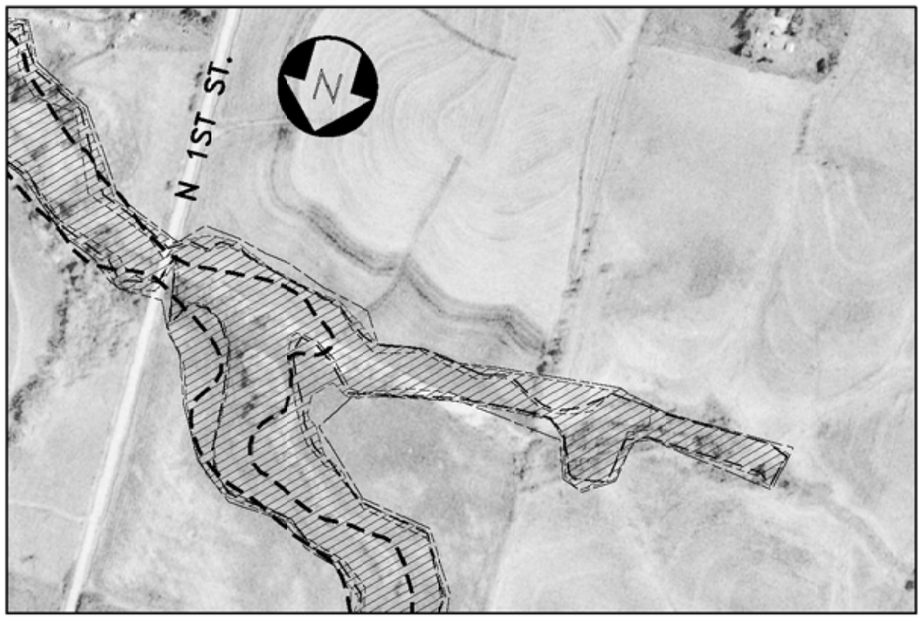
Stream Segment 38

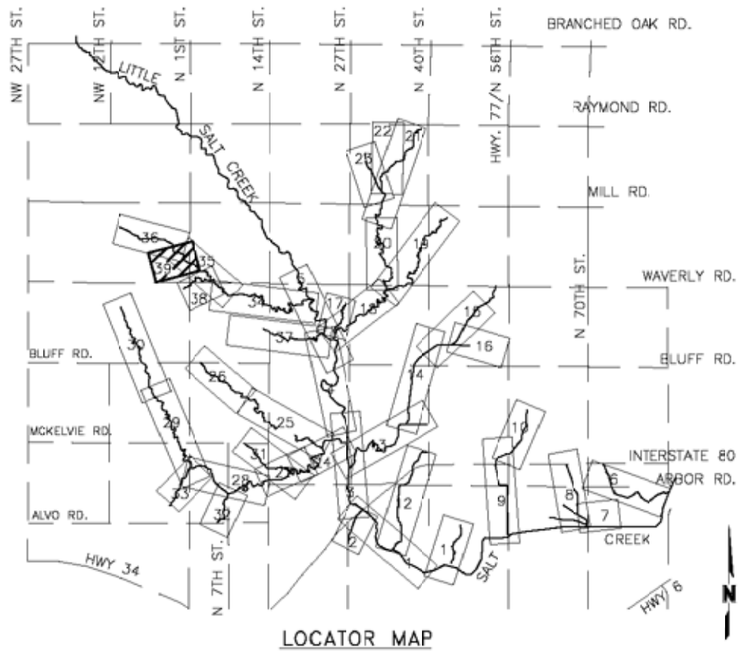
Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed

FIGURE: I-13AR



100' 300' 500'
0' 200' 400' 1000'

LOCATION OF ENVIRONMENTALLY SENSITIVE WETLAND AND WATER AREAS ARE SHOWN ON FIGURES I-3 & I-4



LOCATOR MAP

------ 2-YEAR
– – – 10-YEAR
100-YEAR
▬ ▬ ▬ 100-YEAR LITTLE SALT CREEK FIS
—·— 500-YEAR

OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Plan View of Stream Segment 39 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed	FIGURE: I-12AS

Photo 64: Looking upstream from North 1st Street.

Stream Segment 39 in UPZ N-5

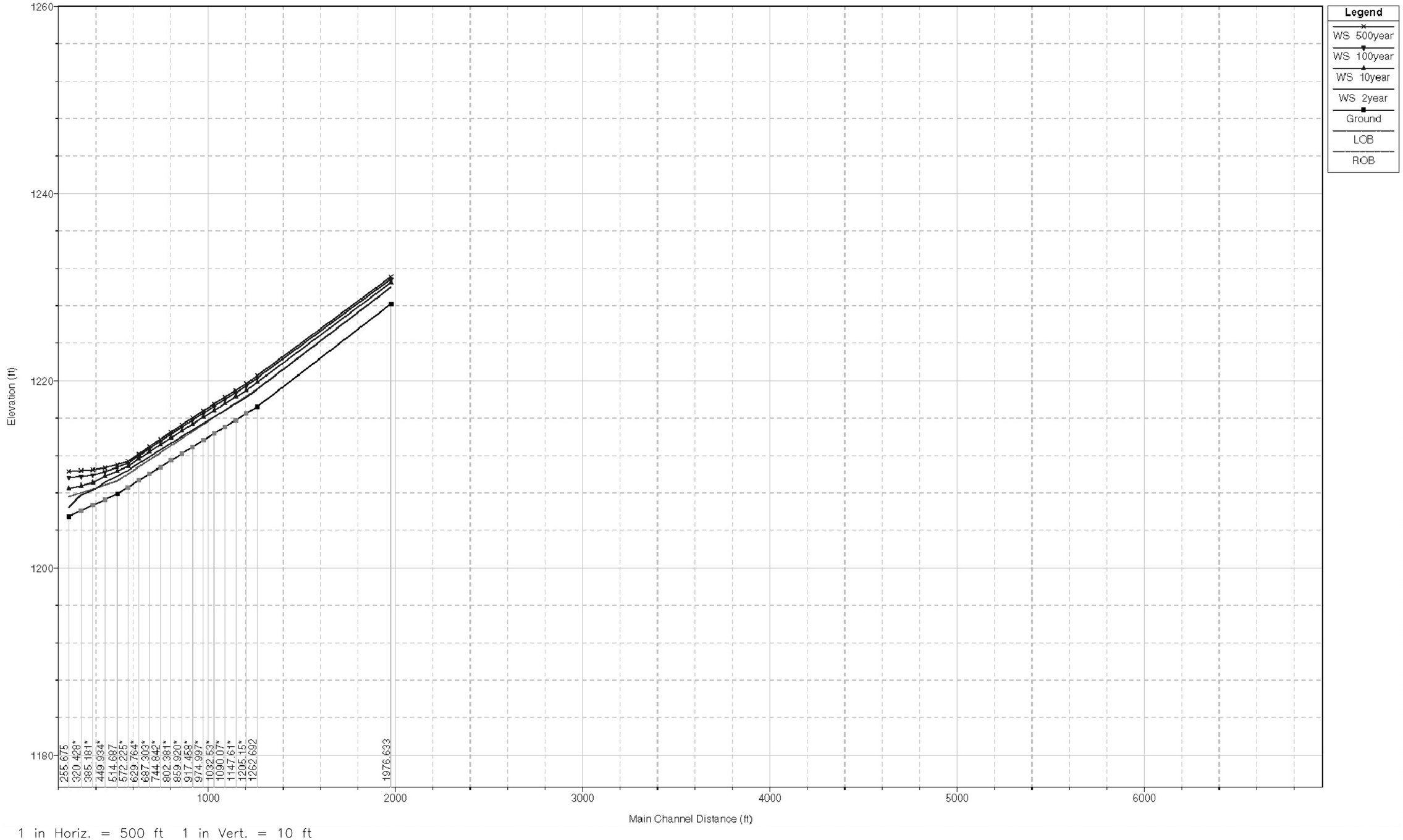
Evaluation

Stream Segment 39 begins at the confluence with the N-5 mainstem just west of North 1st Street and extends westerly 1/4 mile.

- Reach Stability — This reach shows no signs of active stream bed and bank erosion. The culvert at North 1st Street serves as a hard point in the channel. The channel has an approximate 2-year capacity and non-erosive velocities.
- Flood Hazard — Commodity crops, pasture, and wetlands along the channel are subject to flood hazard. No buildings appear to be within the limits of the 100-year floodplain.
- Infrastructure — There no apparent overhead or buried utilities in the reach. No roadways cross the reach.
- Water Quality — Runoff from adjacent and upstream crop land is the dominant characteristic affecting surface water quality. Septic systems serving acreages and farmsteads would be a source of pollutants if not properly maintained. Riparian habitat has been preserved in the stream segment.
- Land Use and Ownership — The land around this stream segment is privately held. The land use is agricultural and is not projected for development by the LLCCP.
- Multi-Purpose Use Potential — A direct connection with the N-5 mainstem enhances the reach's viability as a wildlife and habitat corridor. Preservation as an agricultural stream corridor will provide opportunities for connecting wildlife and habitat corridors.

Threat Matrix

Issue	Degree of Threat		
	Low	Medium	High
Reach Stability	✘		
Flood Hazard Potential	✘		
Infrastructure	✘		
Water Quality	✘		



1 in Horiz. = 500 ft 1 in Vert. = 10 ft

OLSSON ASSOCIATES 1111 Lincoln Mall Lincoln, NE 68508 1-402-474-6311	Lincoln, Nebraska	Stream Segment 39 Interim Stormwater Hydrology and Hydraulics Report for Lower Little Salt Creek Watershed	FIGURE: I-13AS